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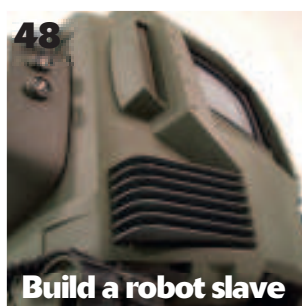
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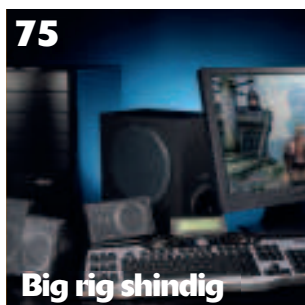
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The G80 core arrives and by Jiminy its unified shaders make it fast. How fast? Read on...



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PCFormat

Welcome

This is a stunning month for next generation kit. Not only has Intel rolled out its first Quad Core processor, but we've also managed to get our hands on NVIDIA's GeForce 8800GTX, the world's first DirectX 10 card.

Best of all, the CyberPower rig that you can see in this month's front end boasts both of these along with a bevy of top of the range kit to keep the whole thing humming along at breakneck speeds: a pair of

raptor hard drives and 2GB of dominator RAM should keep any future gazing buyer happy. So impressive is this system that it got the whole office gathering round cooing, a surprisingly rare reaction.

Of course this interest could have something to do with the three-panel display that we borrowed from our immersion feature. The combination of an insanely powerful PC and to-die-for display made for one of the most impressive systems

ever. God we love PCs.

Next month we'll unveil the new boss of PCFormat along with a brand new look. We'll see you then...

Enjoy the issue,



Alan Dexter, Acting Editor



Al Bickham, Technical Editor

A week. That's how long it's taken us to butterfly-net our hair-trigger Tech Ed. After seeing *Oblivion* running at 64FPS on NVIDIA's knockout 8800GTX graphics card with all the options cranked to 11, Al proceeded to harlequin his way around the office like a glue-fuelled schoolboy. Take it from us, burly entomologists are harder to come by than you might initially imagine.

Achievement of the month Picking a 'Very Hard' lock with zero Security skill. get in!



James Carey, Games Editor

This month Carey indulged his techno-fetish like never before. His Total Immersion feature showed us a side of the Games Ed we never want to see again. Christmas has once again supplied him with a big sack of gaming presents, the pleasures of which you can share starting on page 22. Well, it is the season.

Achievement of the month Retaining the self-appointed title of Sexiest Man on PCF despite all the evidence to the contrary.



Jeremy Laird, Technology Writer

Number of cars written off: One. Near-death experiences: Ditto. Number of CPU cores tested: Eight. Just your average month, therefore, in the life, times and travels of Laird. But not free from the tinge of

disappointment. The destruction of Bavarian metal aside, first impressions of Intel's quad-core killer failed to impress, and four weeks passed sans a significant roll out of HD tech.

Achievement of the month

Getting back in the saddle with a new straight-six steed.



Dave James, Staff Writer

Team Dave set out this month to uphold the gaming honour of PCFormat, travelling to the Pro Evolution 6 tournament at Arsenal's glittering Emirates Stadium. In the preliminary stages everything was going swimmingly: he'd gone up against a pack of feral Loaded journalists and topped his group. Unfortunately the mischievous Mr. San

Miguel conspired with his opponent in a later round to dump him out of the competition. "I was robbed," he was heard muttering the following day, as he nursed his aching head.

Achievement of the month Playing around in a scrapyard with a hard drive and a big electromagnet.



Frontend

THE BEST OF THE MONTH IN COMPUTING

Eye Candy

**Cyber-power
Gamer Infinity SLI
KO Big Rig**

Yer darn tootin' it is. Thanks to the Extreme Edition Intel Core 2 Quad CPU and all-new NVIDIA 8800GTX graphics card, this baby rocks the fat one. 61fps in *Oblivion* do you Sir? No? How about 12,560 in 3DMark06? Them's the numbers of a high-end CrossFire setup – in a single card. Ladies and gents, this is the Sergeant Major of games rigs.

Under the hood

CPU Intel Quad Core X6700

RAM 2GB PC6400 DDR2

Display Viewsonic 19-inch

Storage 300GB

3D card NVIDIA GeForce 8800GTX 768MB

Extras Multi tone case, Creative 7.1 speakers, Logitech keyboard and MX518 mouse.

"An integrated chip like Fusion will make Vista fly along happily"

Fours to be reckoned with

Quad core is finally here after months of chatter. We benchmark it to bits on page 70 and will happily furnish you with our findings. What's more, we still found time to give the NVIDIA 8800GTX DX10 card a good seeing to on page 62.

Immerse yourself

Does a keyboard and monitor not cut it any more? Head to page 107 where we take a look at the kit you need to allow yourself to completely lose yourself in a virtual world. Flight sims, racing games and first person shooters all get an extra dose of realism thanks to some imaginative equipment, including, yes, some 3D goggles that make you look ridiculous.

King of the castle

The *Total War* series returns with *Medieval II*, bringing the large scale battles back to the dark ages. Castles, catapults and breathtaking numbers of on-screen units combine to create an experience that will have wannabe King Arthurs positively salivating. Advance all units to page 88 now.

AMD's CPU/ GPU fusion

It's not quite system-on-a-chip. But it does promise cheaper powerful PCs. Welcome to Fusion, AMD style

The world's first integrated PC processor combining the functions of the CPU and GPU on a single chip is coming and could be here as soon as 2008. Processor maker AMD has announced plans to launch its first such integrated chip by early 2009 under a new brand name, known as Fusion.

When AMD went public earlier this year with its intention to bag Canadian graphics outfit ATI lock, stock and precision-rendered barrel, the prospect of an uber PC processor uniting the best technologies from both companies was immediately mooted. On October 25th, the deal was finalised and AMD wasted little time in unveiling the new Fusion platform. According to AMD, Fusion processors will deliver "step-function increases in performance-per-watt relative

to today's CPU-only architectures, and provide the best customer experience in a world increasingly reliant upon 3D graphics, digital media and high-performance computing."

If that's the PR puff, what are the likely real-world benefits of a processor with both CPU and GPU functionality? First and foremost, an integrated processor offers reduced complexity in terms of both total system chip count and the overall chip-to-chip wiring. Fewer chips and simpler motherboards, in turn, will deliver cheaper systems. Reduced complexity also promises to allow PC functionality to be squeezed into even smaller form factors than is currently possible. So far, so good. Next up is a reduction in power consumption. In a conventional PC, the GPU and CPU are separated by a PCIe

Object of desire

We're all getting into the Christmas spirit here at PCF, scribbling away at our various lists in the hope that a tech savvy Santa will come and leave a big sack of gadgetry under our respective trees. If you're desperate to see what topped our Chrimbo collections, and perhaps garner some ideas for electronics obsessed friends, skip over to p36 now.

**top
stories**

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NEWS AT SEVEN
Your news, when
you want it

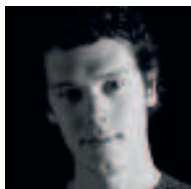
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your Lindens

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WEBCAMERON
When satire goes
horridly awry





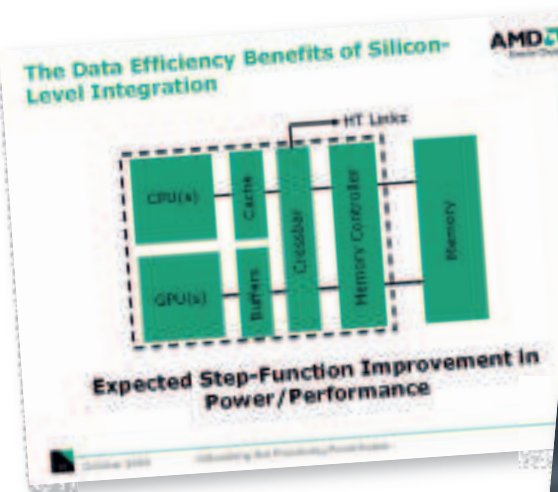
Mike Channell
POWERED BY EGG-NOG

All I want for christmas is four cores. And a car.

Well, winter is here, and to be honest we've hardly been blown away by massive games in the Christmas build up. *Neverwinter Nights 2* was clearly a highlight, but other than that there's been the odd inspiring idea, but nothing like the bumper haul of must-play titles that I usually reserve for those days of post *Chrimbo* comedown. Evidence, if evidence were needed, that things are a bit thin on the ground: I've spent the past few days playing *Crimson Skies*. Yes, the *Crimson Skies* that was released in 2000 and that we covered several months ago in *Rediscover*.

Still, there's a fair bit to look forward to in the new year, *Bioshock* has piqued my interest in particular – it's been a while since I've been traumatised by a game's trailer and this could well be the title to inject some terror into my life. Of course the Xbox 360 chaps are all getting mightily excited about *Gears of War*, and while it's not the most cerebral of shooters it bodes well as the first time the *Unreal 2007* engine has been allowed to stretch its legs.

I guess we just have to grit our teeth through the festive period and hope that 2007 will bring some fresh inspiration.



bus and load of motherboard wiring. By integrating both functions onto a single processor die, less power is required to shuffle data back and forth.

Even with current software, the upside for battery-powered portable PCs is obvious enough. However, with the arrival of Windows Vista, Microsoft's latest operating system, early next year, power

performance thanks to lower chip-to-chip communication latency and greater bandwidth. However, for the foreseeable future, integrated processors will be the reserve of low-power or low-cost PCs. AMD has confirmed that discreet graphics chips will remain the weapon of choice for performance and enthusiast

"Intel hasn't announced an integrated chip roadmap – yet"

consumption will become even more critical. With Vista comes a new and much more computationally intensive 3D graphical interface known as Aero Glass. If you crave the full Vista 3D experience on your laptop, as well as decent battery life, a super-efficient integrated chip like Fusion will be extremely handy.

In the long run, what's more, integrated processors also promise improved

systems. Indeed, a quick glance at the transistor count of NVIDIA's latest DX10 monster GPU explains why. With around 700 million transistors, the GeForce 8800 GTX is a truly enormous chip. Intel's Core 2 Duo, which weighs in at 291 million transistors, is currently the largest single-die CPU. Multiply that by two

Intel's integrated Timna was the name...

Been there. Done that. That's what Intel will be thinking following AMD's Fusion announcement. In 1999, Intel revealed plans to launch a chip that looks similar. Known as Timna, the chip was based on the Pentium III core and boasted both an integrated memory controller and an on-die graphics processor. Timna was originally pencilled in for a 2000 launch, but as with several projects, it fell foul of the failed Rambus memory experiment. The Rambus memory price drop never arrived – a serious problem for a chip designed for budget systems. Intel tried to sidestep the issue with the Memory Translation Hub chip, designed to enable the use of SDRAM. However, a bug was discovered in the MTH chip, delaying Timna's introduction. But it was lack of vendor demand which caused Intel to torch the project in 2000.



Not awfully practical with today's production processes.

But what of arch rival Intel? Intriguingly, the world's biggest CPU maker has already flirted with integrated processor technology (see boxout). For now, however, Intel has not announced an integrated chip roadmap. But we wouldn't bet against it. After all, Fusion threatens to both unseat Centrino as the most popular mobile computing platform and help AMD undercut Intel on pricing at the low end.



Redmond rumours

Microsoft gets into the chip-making business

Intel and AMD, be afraid. Be very afraid. Microsoft is getting into chip design. News recently broke of a new computer chip design team at MS known as the Computer Architecture Group.

In reality, the initiative isn't aimed at producing x86-compatible processors to plug into desktop PCs (for starters, Microsoft lacks the hardware x86 licenses). Instead, it's all about taking

control of lucrative new market sectors and acquiring a better understanding of how to architect its software for the new age of multi-core processing.

For the former, the Xbox is the best example. The first Xbox used an off the shelf Intel processor based on the Pentium III architecture. For Xbox 360, Microsoft commissioned a custom Power PC-based chip from IBM. For the next Xbox, expect

Microsoft to design its own chip, with manufacturing outsourced to a third party.

As for the latter, Microsoft can no longer sit back as Intel and AMD ramp up the clockspeeds and deliver single-threaded performance increases. If Microsoft wants to keep performance – and the PC market in general – moving, it needs to get to grips with a multi-threaded hardware environment.

THEY SAY

"Fusion platforms will continue to fully support high-end discrete graphics, physics accelerators." Phil Hester, Senior Vice President and CTO, AMD



TIME STARVED

Quick ways to entertain yourself

1 REACH FOR THE LASERS

We like our infuriating puzzle games here at PCF, and this one is particularly good fun. Make sure you get the setup right first time because lasers move at the speed of light.

www.laser.narr.as

2 VIDEO NASTY

We've been quite taken by the utterly mad Cyriak's animations. They're impressive but certainly not for the squeamish. We're particular fans of *BeastEnders*.

www.cyriak.co.uk

3 DANGER ZONE

Forget your standard environmental hazards, some clever chap has come up with some more unorthodox warnings to print out and stick around the office. We've already stuck 'Chaotic System' on Mike's PC.

www.tinyurl.com/uf6gt

4 RIDE OF YOUR LIFE

Countless hours have been lost to this little app. Draw a line with your mouse and click play to watch the little bobble-hatted loon whizz along. This generation's *SkiFree*.

www.tinyurl.com/rxhdu

5 DRAW, PILGRIM

A neat twist on a similar concept. Draw a path for your little chap and then use the arrow keys to reach the flag. Watch out for the spikes, though.

www.gamegecko.com/drawplay.php

Be careful who you argue with online – they could turn up at your house with a big, sharp knife.

Reality flame-wars

When trolls break free...

Ahh, the anonymity of the internet. Behind the avatar BoZan442, you're safe from physical harm, and can make your opinions felt without fear of physical reprisal. At least, that's what John Jones of Clacton, Essex, thought in December 2005, after a chatroom disagreement with another poster.

As a result of the events, The Old Bailey recently played host to the first conviction for a crime which, according to Detective Constable Chris Creagh, was "The first instance of a web-rage attack." After Gibbons accused Jones of spreading

malicious rumours about him online, there was a threatening exchange of views in a forum.

Little did Jones realise that Gibbons had decided to make it personal. After a little detective work involving personal profiles and pictures of Jones' family on the web, Gibbons located Jones' address and took a trip there, packing a pick-axe handle and a machete-wielding accomplice, no less.

Jones was assaulted on his doorstep, and sustained wounds to his head, neck and hands before the attackers fled. Fortunately,

Gibbons was apprehended, and after a pretty cut-and-dried session, is due to be sentenced in November. Now, we're not going all sensationalist and screaming "Evil Internet!" here – we'll leave that to the tabloids. But you know the score – just be careful what information you place on the world wide weird.

"The first recorded instance of web-rage"

Picture © Kobal

My goodness, my gaming!

Philanthropic foundation stumps up a healthy amount of cash

Being no strangers to the healing powers of both technology and intelligent gaming, we were interested to find another organisation just as devoted to improving the health of the general populace as ourselves.

Back in issue 190 we told you about how Dr Nick Pickett is using his programming knowledge with Naturalpoint's SmartNAV head tracking hardware, and how we'd

helped this beautiful union come about.

Now we've learned that American organisation the Robert Wood Johnson Foundation is holding a \$30,000 competition to uncover the next batch of software to help improve people's health. The Games for Health Competition comprises three competitions for prototypes and storyboard concepts.

"Today's technology has the ability to both educate

and entertain," said Chinwe Onyekere, program officer, Robert Wood Johnson Foundation. "We want to encourage people with creative minds to harness that potential in a way that leads to better management and delivery of health and health care."

The compo is running until April 1st 2007, so check out www.gamesforhealth.org for details.



FACT!

Bittorrent site hosts can be sent to jail. One of the admins at Elitetorrents.com has been sentenced to five years in stir by Operation D-Elite. Say it aloud...

BEST OF THE PCF BLOG

Remember to bookmark blog.pcfformat.co.uk for the latest news and random wibbling.

Night fight club

Our resident soldier type, Lance Corporal Carey of 2 Section, has posted his latest report from the badlands of the ArMA: Armed Assault Beta. This time he's witnessed a firefight that turns night into day and tanks into charred tin cans full of man-spam. It's an infernal vista full of ordnance, infantry and prowling attack 'copters and has to be seen to be enjoyed.

Green choons

Online music retailer Ethical Downloads is playing the charity card to encourage people to use its MP3 download site. On first inspection it's all rosy, you only pay around £1 for an album, with 25% of the proceeds going straight to charity. The only problem is that it's partnered with a Russian site utilising the same legal sidestep as allofmp3.com. There could be trouble ahead...

Neutrality be damned

The historical fence-sitters of Switzerland have come down on the side of the security services. Swiss company ERA IT has come up with a Trojan designed to snoop on your VoIP communications, in a judiciary-approved wire-tap style. Scary stuff.

The News at Seven, with Alyx Vance

PCF recently caught up with a team of talented academics at Northwestern University Illinois to talk about a news and blog aggregator with a difference

PCF: What is *News at Seven*, then?

NN: News at Seven is a completely automatically generated, customisable news show. Currently, you seed the system with news RSS feeds you're interested in and the system then goes off and collects the top story from each feed. Once it has the story text, the system cuts it down to a more appropriate length, changes the text to sound better when spoken ("Obama, D., IL" for example, becomes "Obama, a Democratic senator from Illinois") and detects excessive passive voice, and so on. The system then finds entities (such as "White House" or "Chicago Cubs") in the text and automatically searches for related images and videos. For the

first story, the system then goes off to search for different points of view on the topic. Once the stories, modified text, images, videos, and blog have been collected the system generates the speech using text-to-

"News at Seven is an RSS-driven news show"

speech technology and then writes its own customized *Half-Life 2* scripts that will run the actual news show. The system then launches *Half-Life 2*, and the show is presented. Once the user supplies the seed RSS feeds, the system runs totally autonomously.

PCF: How has Valve reacted?

NN: We have a good relationship with Valve. The team saw an earlier version of the system and were excited about it; I think its pleased and intrigued to see the Source engine being used in non-gaming systems. The Valve guys were also nice enough to give us a lot of the code we use to play movies in the game; we're returning the favour by providing fixes for bugs we find back to the developer community. We intend to have further conversations with them in the next few weeks to discuss future deployment of *News at Seven*.

You can see more *News At Seven* at infolab.northwestern.edu.

Is automatically generated content the future of webcasts?



FACT!

Within 18 months, Google's UK-based advertising revenue will exceed that of ITV. The search engine giant expects to exceed Channel Four's figures this year.

Inflated claims

Blimpband could be on the way

Airships have had a fairly ignominious history ever since the Hindenburg did a fairly convincing impression of a toasted marshmallow. Outside of a few choice cameos in *Crimson Skies*, *Ninja Turtles* and American sports events, the airship has hardly had a place in modern culture.

This could change, though, after the first low-altitude tests of the Stratellite in the Mojave desert; a fairly ingenious method of providing broadband to large expanses of land. Sanswire, the

company behind the project, has designed a high-altitude, unmanned airship that should sit between 12 and 13 miles up and cover the huge geographical areas that fall within its line of sight. We've often lamented the lack of WiFi on public transport, but with an array of broadband balloons sitting high above our heads we could soon find ourselves with uninterrupted access to the net.

www.sanswire.com



This could be the answer to our 'WiFi on the train' prayers.

Microsoft

VERSUS

Apple

ROUND TWO

Previously in **PCFormat**, we had a look at the Zune vs iPod battle, which is heating up just in time for Christmas. Since last issue the squabble between the two firms has escalated, and there's been more dirty laundry strewn across the internet. What's most amusing for casual observers idly flicking through blogs pontificating on the subject is just how petty the sniping has become; even Apple head honcho Steve Jobs has been lured into taking pot shots at the big M.

No one's delivered a knockout blow just yet, but then this is closer to a playground scuffle than a prizefight. Having said that, in this age of synergy between Mac hardware and Windows software, we're actually quite pleased that the old wounds have been reopened. After all, we regularly stick our tongues out at MacFormat when we pass them in the corridors of power and that's not something we're entirely comfortable about changing.

Besides, searching YouTube for Apple ads demonstrates that the fruitier company still blasts PCs for being dull and unreliable. Including, laughably, one that refers to Windows machines' propensity to harbour viruses. Why is that funny? Read on and find out...

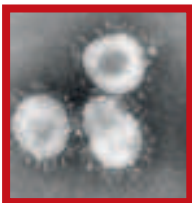


STEVE JOBS VS ZUNE

First of all, Steve Jobs, head of all things Apple, was asked whether he was worried about Zune, and we got a bizarre glimpse into exactly what he thinks iPods are for. "I've seen the demonstrations on the internet about how you can find another person using a Zune and

give them a song they can play three times," he told Newsweek. "It takes forever. By the time you've gone through all that, the girl's got up and left! You're much better off to take one of your earbuds out and putting it in her ear. Then you're connected with about two

feet of headphone cable." The fact that he sees song sharing as exclusively an entrée to getting your oats is crazy enough, but the suggestion that by shackling your seduction target to you via your headphones might up your chances is completely bonkers.



VIRUS VS IPOD

Whoops. After his stab at the Zune's file-sharing capabilities, Jobs and co were bitten, at least indirectly, by Microsoft's own success. Reports came in that

some iPods were rolling off the production line preloaded with a rather nasty form of virus that could infect any Windows PC they were connected to. While a fix is

now available, it was generally agreed that paying £200 for your piece of hardware was enough of a sacrifice without scuppering your PC's security as well.



APPLE VS WINDOWS

In an interesting twist, Apple decided it would attempt to turn its own misfortune into a marketing opportunity. In a thinly veiled jibe at Microsoft, the support page for the iPod virus is found at www.apple.com/support/windowsvirus

and entitled 'Small Number of Video iPods Shipped With Windows Virus.' It gets better, though, when you realise that every time the page refers to the virus, it's very careful to place the word Windows before it. The cherry on top is this

particular sentence, which had us rolling in the aisles: "As you might imagine, we are upset at Windows for not being more hardy against such viruses, and even more upset with ourselves for not catching it." Now that's sincere...



MICROSOFT VS APPLE

Understandably, Microsoft wasn't too happy with being smeared like this. After all, as one canny blogger points out, you don't blame the weakness of a person's immune system when a company distributes food tainted with E Coli. Microsoft's Jonathan Poon was indignant and was the first to

respond on his blog. "It's not a matter of which platform the virus originated on. The fact that it's found on the portable player means that there's an issue with how the quality checks, specifically the content check was done," he wrote. "This also indicates that the base device

from which the image was duplicated to the other devices in the manufacturing run was connected to a PC that most probably did not have, and I quote this directly from its press release, 'up to date anti-virus software which is included with most Windows computers'."



PCF
Verdict

Well, it all seems a little bit petty, but we're inclined to side with Microsoft here. After all, if you've made the mistake of putting a virus on a player, which is as likely to be bought by a PC owner as a Mac user, you can't just attempt to palm the blame off on someone else. Still, we're becoming less and less enamoured with the limited sharing the Zune offers, so despite Steve Jobs appearing to have flown off at the deep end, he might yet have a point.

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THE ORIGINAL DAWN OF WAR

The taxman cometh

The US Congress is trying to find ways to squeeze gamers for their hard-earned cash

An arm of the US Congress, the Joint Economic Committee, has announced it's to examine virtual economies. It's supposedly to clarify the situation, and apparently isn't an exercise in ushering in new taxes for the gaming community.

The investigation will look at the sale of goods and services that take place within virtual economies, and there's unlikely to be any new taxation where there's no real world exchange of monies. However, where real cash can be generated, such income is taxable under existing laws; and this is where the JEC expects to resolve things in a 'common-sense manner'.

JEC estimates that there are currently 10 million people populating

online worlds, with a good percentage of those in everyone's favourite grind-'em-up, *World of Warcraft*. The economies of *Second Life* and others are going to be examined, which smacks of bean counters legitimising their online activities to us, but maybe we're just too withered by cynicism.

In essence, even if a new tax were introduced (and spread around the world), it would only affect those who are trying to make money out of it, which for the most part only covers gold farmers. The obvious knock-on from this is that it could increase the cost of buying in-game currencies, but as this is often against the EULA anyway, it could be tricky to actually implement new levies.

Do you want a virus with that?

McDonald's gives away free trojans

We're used to the criticisms of the effect fast food has on our waistslines, but we never thought it could damage our PCs as well. Unfortunately, those who entered and won the Japanese competition to win one of 10,000 McDonald's branded MP3 players found that, along with 10 preloaded songs, there was a strain of the QQpass trojan nestled on the drive.

The virus collects usernames, and passwords, and bundles them off to nefarious net dwellers. McDonald's was fairly quick to react, setting up a 24-hour helpline for those afflicted by the digital sniffle

and apologised profusely on its Japanese site. Still, it's a massive public relations gaffe whichever way you look at it, and one that seems to be becoming increasingly common. Even the golden goose of MP3 players, Apple's iPod, hasn't steered clear of the scandal, and you need to turn to page 15 of this issue to see the resulting brouhaha.

It seems we all need to take a bit more care when plugging USB devices into our precious PCs. Steve Stasiukonis on the Dark Reading site (www.darkreading.com) detailed an experiment that he and his company, Secure Network Technologies,

performed for a client. Simply by scattering 20 infected USB memory sticks around the company's offices, acres of sensitive data was collected thanks to the inquisitive nature of its employees. PCF's wild-eyed warning? Be careful what you stick in those innocuous looking ports.



Web politics

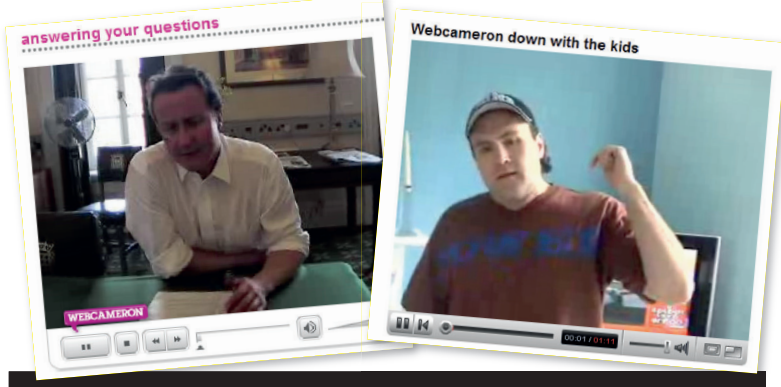
Labour and the Conservatives are divided over online video behemoth YouTube

Our elected representatives have found a new issue to bicker over: YouTube. It all started with Tory leader David Cameron starting up his own vlog. As part of Cameron's attempts to connect with younger voters, he's shown chatting while loading the dishwasher and attempts to answer questions from his viewers.

Of course the Labour party wasn't going to take this lying down, and one of its MPs, Sion Simon, took it upon himself to create a witty riposte by impersonating the Tory leader. Unfortunately, he missed the mark spectacularly. In a brilliant piece of car

crash YouTubing, Simon stuck his cap on backwards, broke out his best chavvy accent and, bizarrely, told viewers to come and sleep with Cameron's wife and take one of his children away. There was general outrage and Simon removed it from YouTube – but it's still easy to find.

Enough, we say. If it's a choice between dull video blogs or unfunny 'satire' we'd rather have neither. YouTube is a bandwagon at the moment, but we'd rather those looking to take advantage of it took a measured leap on board instead of just hurling themselves at it and getting crushed under the wheels.



NEWS IN BRIEF

Cold comfort

Like little Norris McWhirter, the fellows over at Tom's Hardware Guide have gone overclocking crazy with their attempts to get a Pentium 4 CPU to break the 5GHz barrier. And, wouldn't you know it, they've succeeded; all it took was a massive amount of liquid nitrogen constantly fed into the cooler.

IBM sues Amazon

IBM has filed two lawsuits against Amazon for alleged infringement on five different patents. These range from presenting advertising as an interactive service to ordering items using an online catalogue. Apparently IBM has been in contact with Amazon about this before but it had never responded in a serious manner.

Microsoft eyes the CPU market

A report on the New York Times website claims that MS has created the Computer Architecture Group, a combined effort between two of its research campuses to create next-generation CPUs. The idea is

that the next Xbox will be powered by a Microsoft chip, which is apparently heavy on the voice recognition.

Block tackle

It hasn't taken long after the discovery of the greetings card EA put inside new copies of *BF2142* for the community to find a way to block the in-game adverts. Check out tinyurl.com/y5f7fl for the post and find out how to keep the capitalist peeg dogs out of your game.

52%
STAT!

The percentage of gaming audiences research company ComScore insists is female. Much as we live in forward-thinking times when it comes to games, we find that suspicious.



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Jeremy Laird
TECHNO BABBLE

The Kentsfield conundrum – is more less?

Intel's Core 2 Duo processor has been buried in rave reviews since its launch this summer. I should know – you can find excerpts from one or two of my very own 'Odes to Conroe' plastered all over Intel's current marketing material, physical and virtual.

With that in mind, I'd like to take this opportunity to become a turncoat on La Intella on the subject of Kentsfield. To wheel out the world's first quad-core PC processor just 18 months after dual-core chips hit the desktop is an impressive feat. It also sets a frightening precedent for the future of processor performance.

Given the right applications to crunch, Kentsfield produces impressive performance figures – but sod the objective considerations for the time being. After a couple of weeks with a Kentsfield on call, the real question is: do I want to own one? And the answer is no. It runs too hot, shows some signs of instability and, for all but a few niche usage models, gives little or no real-world benefit. The fact is that the software environment we have at the moment ain't ready for Intel's thread-tastic new chip.

Gearredup

EYE-BOGGLING EXCELLENCE

Screen siren



Optoma HD70

From £675 Available Now Web www.optoma.com

With HD-DVD and Blu-ray belatedly, and rather reluctantly, appearing in PCs in the UK, our attentions turn to display devices that are capable of doing justice to the image quality on offer without breaking the bank. Enter Optoma's latest bargain basement projector, the HD70. As the nomenclature suggests, this is a true HD device with a native resolution

of 1,280x720. That's not enough for full 1080p goodness, but it's still a huge step up from DVD. It's also great to see an HD projector sporting movie-friendly DLP tech at this kind of price, especially from a well-regarded specialist such as Optoma. This isn't rebadged commodity item. Keep your eyes peeled for a review in these pages soon.

Splendid specifications

A contrast ratio of 4,000, 1,200 lumens and 1,280x720 native resolution – all that for less than £700. Isn't progress great?

DRM display

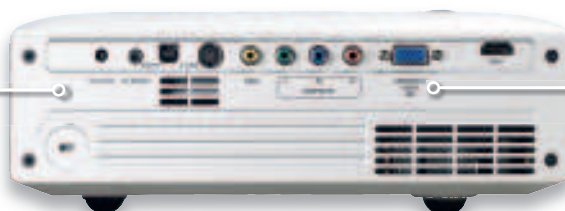
Like it or loathe it, HDCP is essential for guaranteed digital playback of HD-DVD and Blu-ray content. The HD70's HDMI port therefore provides essential peace of mind.

Dark chip

We've seen cheapo LCD HD projectors before, but the Optoma HD70 packs Texas Instruments' Dark Chip 2 DLP technology. Not TI's latest DLP chip, but a great performer all the same.

Get connected

As well as that HDCP-capable HDMI port, VGA, SCART RGB and component connectivity is provided.



We have lift-off



Shuttle SD32G2

From £265 Available Now Web eu.shuttle.com

Take the world's best PC processor, insert it into Shuttle's iconic G2 Series small form factor chassis and sit back, safe in the knowledge that there are few finer desktop computing solutions on the planet. Of course, this isn't the first Core 2 compliant Shuttle-branded breadbox to appear. As a member of the original vanguard of truly stylish PCs, the classic G2 is still one of our all-time favourite designs – it's timeless enough to be seriously sexy to this day. The SD32G2's chipset comes courtesy of Intel in 945 trim. Updated for Core 2 support, it delivers 7.1 HD audio and the full 1,066MHz FSB treatment. There's a 16-lane PCI-E port for graphics, but the 250W PSU probably rules out any NVIDIA G80 action. Pity.





Space P-Oddity

ViewSonic VX2245wm

From £370 Available Now Web www.viewsoniceurope.com

Oh, the ubiquity. With iPod adapters springing up on everything from BMWs to beatboxes, it's tempting to think the only remaining niche to fill is an iPod adapter for iPods, but that's not the case. This month, ViewSonic has proved there's still money to be milked from this cash cow – they've given us the world's first PC monitor with an integrated iPod dock. Of course, given the frequency with which Apple massages the iPod's form factor and port locations, the VX2245wm is a dubious long-term investment. Yet at just £370, it remains good value for a stylish 22-inch LCD display with a 1,680x1,050 native resolution and 5ms pixel response.

Twice the TV

Hauppauge WinTV Nova-T 500

From £100 Available Now Web www.hauppauge.co.uk

Twin digital TV tuners are an absolute must for any self-respecting media centre PC. After all, how else can you gorge yourself on brain-melting reality TV at the same time as recording the latest, ever more ludicrous episode of *Lost*? Well, Hauppauge has just made your moral and intellectual decline that bit easier, courtesy of this dual-tuner board. Headline features include high sensitivity tuning tech, for those users situated in low signal strength areas, and software tools for compressing and transferring video to portable devices. Crucially, as we approach the end of 2006, the Nova-T 500 is also forward-compatible with Windows Vista.



Go faster

NVIDIA GeForce Go 7950 GTX

Only available as part of a notebook computer www.nvidia.com

NVIDIA's latest desktop GPU, the GeForce 8800 GTX, may pour out pixels at an alarming rate, but there's something uniquely impressive about a notebook PC with desktop-rivalling rendering power. This new mobile graphics chip from NVIDIA is nothing if not impressive, with 24 pixel pipelines, eight vertex units, a core clockspeed of 575MHz and a memory frequency of 1.4GHz, it's significantly more powerful than a GeForce 7800 GTX, which was the fastest desktop card for much of last year. As ever, Dell has bagged an exclusive for the first few months of the Go 7950's existence. Still, the XPS M1710 is a very nice machine if you can afford it. Expect the usual Clevo clone 17-inch systems to join the party early next year.



PREVIEW PORTABLE POWER

Apple sauce



Microsoft Zune

From £200 Available Now Web www.microsoft.com

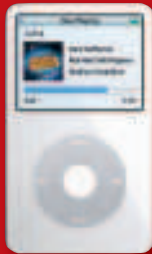
And so it came to pass that Microsoft tired of watching Apple triumph in the portable media player market. The Beast tasked its finest and brightest – that'll be former Xbox maestro J Allard – to come up with the ultimate iPod killer. The result is the new Zune. To cut a long story short, kudos to Microsoft for taking on the iPod's iconic style with the Zune's social networking substance. The Zune is all about finding innovative ways, including WiFi connectivity and Windows Live Messenger integration, to enable music-sharing without treading on any DRM toes. The fact that it's bulkier, uglier and currently only comes in one 30GB version might put paid to the first-generation Zune's hopes of world domination – all despite the iPod-humbling 3-inch LCD screen with the usual 320x240 resolution and support for WMV, MPEG and H.264.

Three alternatives...

Apple iPod Gen 5.5

From £189 Available Now
Web www.apple.com

Still by far the sexiest hard drive player on the streets. The latest refresh brings a brighter screen and better battery life, but little else. It hasn't got a great video player, either, but it's still the one to beat.



Creative Zen Vision W

From £275 Available Now
Web uk.europe.creative.com

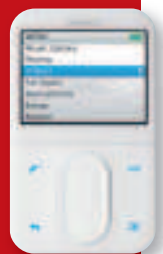
We're all for the widescreen form factor, but we're less crazy about the fact it has significantly fewer pixels than the original Zen Vision.



Creative Zen Vision M

From £209 Available Now
Web uk.europe.creative.com

Don't let the confusing nomenclature of Creative's range defeat you – this player is a very different beast to the Vision W. The Vision M is very similar to, but nowhere near as desirable as, the classic iPod.



ANALYSIS

AMD PLAYS QUAD-CORE CATCH UP



Poor old AMD. First it was Conroe, and now it's Kentsfield. Archival Intel keeps on pumping out the killer chips and piling on the pressure. As we've mentioned in PCF's passim, AMD's initial response to quad-core Kentsfield is the upcoming 4x4

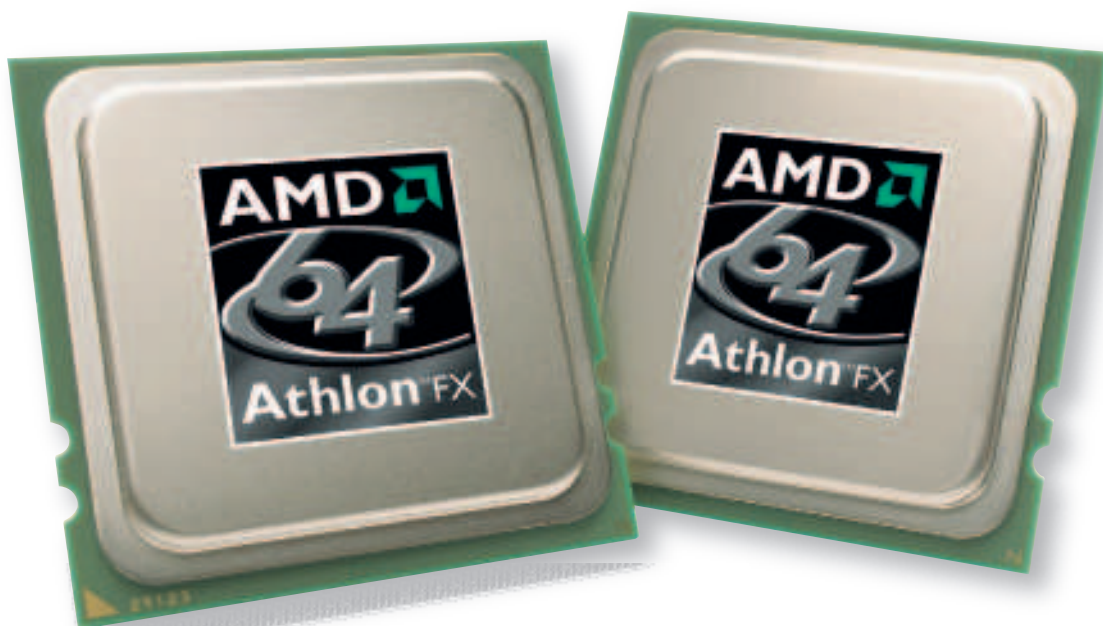
platform. As we go to press, AMD has yet to announce an official launch date for this dual-socket platform, but there's a good chance it will be out by the time you read these words.

Accompanying the 4x4 platform is a new socket for desktop chips, the 1,207-pin Socket F. Originally intended

as a multi-CPU interface for workstations and servers, Socket F has been hastily commandeered for desktop use in response to Intel's frightening quad-core roadmap. Of course, a new socket demands new processors, so AMD is prepping a range of Socket F Athlon 64 X2 FX chips. Likely to be known as

Athlons FX-70, 72 and 74, these new CPUs will clock in at 2.6GHz, 2.8GHz and 3.0GHz respectively and stick with AMD's rather old-school 90nm production. All share the same 2 x 1MB cache memory arrangement. In other words, only the FX-74 is the only chip in the new line up to offer improved single-socket performance compared to AMD's existing flagship AM2-socket CPU, the FX-62.

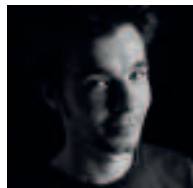
Nevertheless, thanks to AMD's superior core-to-core communications bandwidth and latency, and hence multi-core performance scaling, there's a good chance that a pair of FX-74s will be enough to keep Kentsfield honest. This only leaves the problem of pricing. Quite how AMD, using a pair of 90nm chips, can possibly compete with Intel's single 65nm product is hard to see, unless the FX-74 is positioned well under £500 per processor, we suspect it will remain a niche offering of interest only to die-hard AMD fans.



“AMD is prepping a range of Socket F Athlon 64 X2 chips”

Gameslatest

GAMING GOINGS-ON



James Carey
LUDDITE IN CHIEF

The last of the gang to fall for PCI-E's charms

I'm facing up to the fact the AGP is dead. Officially, I'm the last member of the PCF team to move over to PCI-E on my home rig (you didn't think *Format's* Games Ed wouldn't have a top-end work rig now, did you?) after years of loyalty. The reasons? Quad-core rigs in the office and G80 blowing apart the competition.

Until now, the gains derived from investing my hard-earned in a Core Duo/PCI-E setup have been minimal. My AGP home system has continued to take anything I've thrown at it thanks to regular AGP graphics card boosts from manufacturers acknowledging that there is a market for high-end AGP cards. Only this week we've seen an AGP X1950 Pro come in, for goodness' sake. Still, all that's got to end for me. When the likes of Valve invites PCF out to Seattle to talk multiple CPUs, you know times are changing. Cross-platform gaming means the new year promises games that take advantage of multiple cores (thanks to their use in the new consoles and the Live Anywhere masterplan) so the time is now.

I'm just grateful it's Christmas so I don't have to buy the kit myself...



Anywhere, any time?

360 and PC in gaming harmony – or committing genocide against each other?

The fight between the consoles and PC isn't just with words.

DUE DATE Q2 2007
PUBLISHER Microsoft
DEVELOPER FASA Studios
WEB www.shadowrun.com

The all-too familiar (not to mention occasionally embarrassing) playground-style battle of 'we're better than you' has been raging between PC owners and their controller-shackled console contemporaries since time immemorial. Microsoft's latest bid to monopolise multiplayer gaming, a Vista extension to its Xbox Live content, may well provide the final

proof of who the gaming daddy actually is.

Live Anywhere's unified servers will provide a one-stop area for gamers to chat and play against each other freely, without having to log in to different games to see who's around. *Shadowrun*, a magical, mechanical multiplayer first-person shooter, will be the first title to support this cross-platform functionality once Windows Vista is finally with us.

"The real reason for cross-platform play is that friends who play on

Windows and Xbox can now play together, that there will be a larger community of players to play with, making it easier to find people who want to play on the maps you like, at the same skill level," Mitch Gitelman,

although the disparity between mouse and control pad has been thoroughly dissected. "We were definitely concerned that the mouse would dominate when we started, but that hasn't been the case. The

"A pop-up appears in your sidebar notifying you that a friend is playing"

Studio Manager for FASA Studios, told us.

The idea is that a pop up will appear on your Vista sidebar notifying you that a friend is playing *Shadowrun* on either platform, and inviting you to join in. All you have to do then is accept and you'll be instantly linked into a game; no IP address or port-forwarding shenanigans – if it works this sweetly it'll be the promised land of networked gaming.

Shadowrun makes no distinction between Xbox and PC owners in the gameplay stakes,

greatest differentiation we've seen is that mouse and keyboard has a slight advantage in long range shooting, but the Xbox controller seems to have the advantage in close-quarters combat."

Open source

Now it's down to Microsoft



Next month we've got exclusive access to Valve and we'll be talking about its recent decision to release *Source* for the 360. It should allow cross platform communication from the outset. The only issue now is Microsoft's access restrictions for devs to the Xbox Live service.

GOSSIP!

Avalanche has confirmed *Just Cause 2* for PC in the Swedish publication *Kong*, just weeks after the launch of the first game.
www.kong.se

ArmA will drop in on UK gamers six months later than in Russia and Germany. We say wait!

Dangling in the moonlight

ArmA: Armed Assault's staggered release schedule is worth waiting for

DUE DATE Q1 2007 **PUBLISHER** 505 Games
DEVELOPER Bohemia Interactive **WEB** www.armedassault.com

For fans of *Operation Flashpoint* the arrival of Bohemia Interactive's soldier sim sequel *Armed Assault* is something akin to The Second Coming. There's a sense of zealotry among the dedicated fanbase, which regular readers of the magazine will know includes Games Ed Carey. Until this month, the future of what James is hailing as the best game ever was uncertain. After courting the major publishers over the past year *ArmA* had remained unsigned.

Morphicon has now picked up the title for Russia and Germany, whereas the UK's own 505 Games bagged it for the rest of Europe. While it's unusual for a game with *ArmA's* pedigree to go so long without a publisher, it's true that the game's had a fairly poor showing at the big conventions this year. The reasons Bohemia hasn't signed to a big publisher are open to interpretation, but *PCF's* had unbeaten access to the latest *ArmA* preview code and we can confidently assert that it will eventually meet expectations.

Why eventually? By the time you read this, the Morphicon release should be on sale. The extra time Bohemia will have between now and the Q1 2007 UK release will undoubtedly mean *our* version will contain improvements. While no game launches without a few bugs, in our opinion UK consumers would do well to wait for the UK edition, rather than import from overseas.



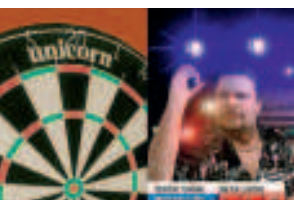
in the pipeline

The eternal cycle of gaming joy continues unabated...

DECEMBER 2006

PDC World Championship Darts

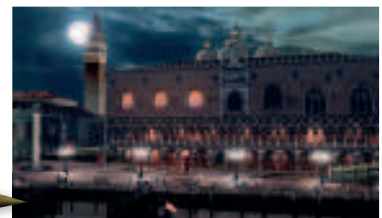
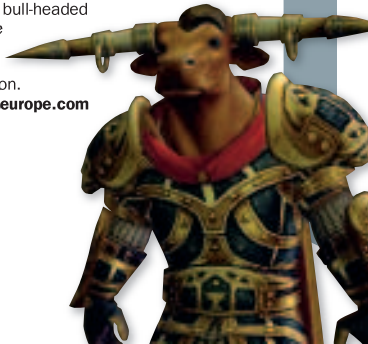
No beer, bully, speedboats or caravans, just action darts – that's what's on offer here. Released to coincide with the World Championship, *PDC* features the voice of darts himself, Sid Wadell. www.dartsthegame.com



FEBRUARY 2007

Dark Age of Camelot: Labyrinth of the Minotaur

The seventh expansion to the massive *DAoC* universe features the first new playable race for two years. The bull-headed Minotaurs take centre stage in this story-driven expansion. www.camelot-europe.com



Belief & Betrayal

Religion's always a mix of the above in the world of fiction, and *dtp's* third-person adventure is no different. Featuring a twisting plot of international intrigue and nefarious Vatican officials up to no good. As usual. www.beliefandbetrayal-game.de

SPRING 2007

Beta eater

Watch out – bandits at five o'clock high

We'll readily admit that WW2 and the battle for total dominion of our skies was a horrific thing, with lots of young 'uns flying around in prop-driven boxes made of canvas and wood. Yet it's not without a certain romantic appeal, particularly thoughts of taking to the skies, and the beautiful, sleek lines of a Spitfire. It's this that **Air Ace Online** hopes to recreate with an intense online battle to become a supreme fighter pilot.

The game features a full-player ranking system with bounty kills and a sister site detailing the war effort in stat form. There will be historical missions and special events set up for your pleasure, as well as a mod set for user-created content.

We've got 50 keys to take part in the online beta test to give away. Some may say that this will be your finest hour... To be in with a chance to get on this furball of a beta all you have to do is drop us a line at betaeater@futurenet.co.uk and answer this simple question.

Which plane scored the most kills in the Battle of Britain?

a) Spitfire b) Hurricane c) Sopwith Camel



Tally ho, Ginger! Check out rural Kent – pretty, isn't it?

Crash Dummy vs The Evil D-Troit

It's been a while since we last saw a 3D platformer on the PC; it's been all FPS, RPGs, MMOs and other assorted acronyms recently. Italian Twelve Interactive could be putting the nail in the platformer coffin here. www.twelvegames.com/crashdummy



SPRING 2007

Jade Empire Special Edition

Bio-wary? Perhaps we're just a little jaded

DUE DATE Q1 2007
PUBLISHER Take2
DEVELOPER Bioware
WEB www.bioware.co.uk

The phenomenally successful console title *Jade Empire* comes to PC, nearly two years after its Xbox counterpart hit the shelves. We can't help but wonder what the motivation for this late release is. Perhaps the success of *Oblivion* on both platforms encouraged Bioware to

make its own free-roaming RPG available to the PC crowd. There's certainly something *Oblivion*-esque about *Jade Empire*.

Set in a sort of alt-history Asia, this action RPG looks like being a must for kung fu fans, even if it's showing its age. It's a combat game, backed up with the kind of

sophisticated storyline you'd expect from Bioware. The company jokes that with *Jade Empire* it has the 'holy geek trinity' (*Star Wars*,

with *Knights of the Old Republic*, *Dungeons & Dragons*

thanks to *Neverwinter Nights* and now kung fu movies) sewn up. *Jade Empire* is, essentially a big, rollicking kung fu epic in *Crouching Tiger* vein.

Mastery of fighting styles is the route to enlightenment with each style having a Zen balance against the others. You'll have to learn when to go drunken boxing and when to do your *Monkey* thang because, despite its late arrival, this game's earned 90%-plus on the consoles, so it should demand your respect on PC.



Hardcore chop-socky action: you can't say fairer.

Europa Universalis III

This stat-heavy empire builder contains more numbers than the mind can deal with in more than 100 nations and 50 pages of stats. Build your own *Sim City*-style capital and create a new national identity. www.europauniversalis3.com



Sins of the Solar Empire

Apparently representing the birth of the 'RT4X' genre, Stardock's latest space-based epic is a blend of *Galactic Civilizations* and a *Homeworld*-style RTS. Plan your empire expansion and watch the battles unfold in full 3D. www.sinsofsolarempire.com

AUGUST

A brave new world

Huxley has a vision of guns and MMOs coexisting happily

DUE DATE 2007 **PUBLISHER** Webzen
DEVELOPER Webzen inc. H-Studio **WEB** www.webzengames.com

The MMORPGFPS acronym associated with *Huxley* sounds like someone got a bit confused while playing *Countdown*, but the idea behind it is actually sound. Combining PvP, RvR and PvE elements from your standard MMO and the skill-based play of *BF2*'s first-person shooty-ness, *Huxley* is taking a leap into a persistent world of war without the craft.

It's a world not just confined to the PC, and we're not just talking dodgy 360 ports either. As a cross-platform MMO, it takes a different stance to the full-throttle, free-for-all nature of *Shadowrun*. The PC players will populate two of the races on the planet – the Sapiens and the Alternatives – and Webzen has decided to ghettoise the 360 community exclusively as the Hybrid Liberation Organisation.

You start the game in the cities, where all the trade and training takes place before venturing out into the battlegrounds for large-scale warfare. That's warfare with up to two hundred combatants. If the idea of such numbers fills you with trepidation you can join up to undertake quest-based missions in smaller groups against the game's advanced AI.

With the mouth-watering prospect of pwn'ing legions of Xbox 360 players in the massive cross-platform battlegrounds, the release of *Huxley* is already shaping up to be the MMO event of next year.

The Precursors

Four months of bug testing was ambitious for *Boiling Point*, and *Deep Shadows* may be over-reaching with this FPS/RPG. Taking the fight to alien worlds won't be easy. www.deep-shadows.com

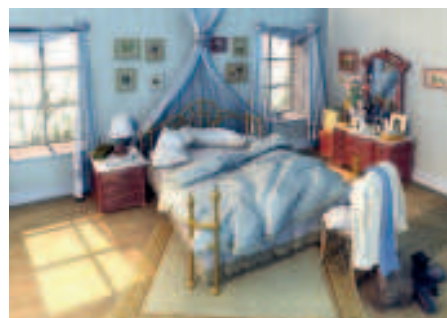


AUTUMN

WINTER

Gray Matter

From the pen of *Gabriel Knight 3*'s Jane Jensen comes another point-and-click from adventure game reviving publisher du jour, dtp. *Gray Matter* is a supernatural and psychological thriller featuring an eerie mansion, a crackpot scientist and a street performer. www.dtp-ag.com



Warfare

Simple and straightforward, that's how we like our game titles. No messing. The US versus Saudi Arabia in typical Middle Eastern combat scenario is the first campaign, with the second being an attempt to boot the Yanks out of Saudi Arabia. www.gfi.su

2007

Alan Wake

Wake up and smell the psychological thriller

DUE DATE 2007 **PUBLISHER** Remedy
DEVELOPER Microsoft **WEB** www.alanwake.com

The nasties come out at night, so you've got to stay awake. Geddit? A. Wake. Brilliant, we know. Prophetic title aside, *Alan Wake* is shaping up to be the game of next year and, being Vista exclusive, Microsoft will be hoping that it becomes the killer app that makes the general public want to go out and spend the necessary banknotes on getting hold of its latest OS.

The technical capabilities of the new DirectX 10 are being used to great effect to create a highly detailed, free-roaming world for the action to take place in. There are no pop-ups in the rendering of this vast slice of sleepy north-west America, an area apparently measuring a fairly spacious 10x10Km. The dynamic weather effects and day/night cycles are also fantastically beautiful, but not only that, they play a pivotal role in the story. When the sun goes down you want to make sure you've got a torch handy, that or a very reliable lighter...

Relocating to the small town of Bright Falls (Remedy does love its themed names), Alan, an aspiring Steven King, is determined to get over the loss of his missus, his creeping insomnia perversely balanced with terrible nightmares and an unfortunate bout of writer's block. The story is told through his inner monologue in true cinematic style and the mission structure is approached in the episodic manner of a *Twin Peaks*-style TV show. You're not locked down though – you're free to explore the beautifully dark world for yourself with the missions and episodes driving the story forward independently.

Dark nights

Alan's ubiquitous torch is as vital a tool for dispatching the minions of darkness as his trusty firearm is – especially because, as the game progresses, the days grow shorter and the nights grow longer.

Wakey, wakey

We spoke to Creative Director Petri Järvillehto and Lead Writer Sam Lake about Remedy's latest masterpiece

PCFormat: We saw *Alan Wake* displayed at this year's IDF and Intel was making the point that you take advantage of all four cores of the Core 2 Quad processor. How do you utilise all four cores? Is one allocated for physics, one for AI, for example?

Petri Järvillehto: We're pushing the technology, and the game architecture is built to leverage multiple cores. This architecture works well on the Xbox 360 and modern PCs. With multiple cores, we can

handle physics, streaming, world simulation, AI and so on in separate threads.

PCF: What have you achieved using DirectX 10 that wouldn't have been possible using DX9?

PJ: It opens up opportunities for us. Even though *Wake* also runs with DX9, we'll be able to leverage the new DX10 features. We're not commenting on specific features at this stage, though.

PCF: How will the proposed dynamic weather effects actually impact upon playing the game?

PJ: The dynamic nature of the weather is something that we use to create not only drama but gameplay scenarios as well. The same location can become and feel different depending on whether it's day or night, or whether it's clear or foggy. Limiting visibility at times has a clear effect on the gameplay, a twisting mountain road becomes a

threatening obstacle when you cannot see what's ahead, and hearing the approaching enemies but not being able to see them brings variety to combat gameplay. But those are all rather subtle effects. A tornado that actually works in the scope of our physics simulation and throws heavy objects like cars wildly through the air and tears down building certainly has a huge impact on play, as I'm sure you can imagine.



Weather man

The dynamic weather effects change everything across the game world, affecting the gorgeous panoramic views right down to the way you drive. They are also used for dramatic effect in missions too.

Just like your dad drives

The free-roaming nature of the world surrounding Bright Falls means that driving is an integral part of the game dynamic. Sorry, but there's probably no drive-by shootings or hydraulic pimp-mobiles, GTA fans.



PCF: You've said that locations will open up as the player progresses through the game, how have you manifested the barriers that keep the player from visiting these areas out of turn?

Sam Lake: For the most part we won't restrict the player's movement. We make it clear to the player where he needs to go next, if he wants to follow the main thriller storyline, but if he chooses to explore, we encourage him to do so, there is a good amount of entertaining discoveries to be made in the game world. There will be some areas that are closed until a certain point in the story, or temporarily off limits at certain times, and all these instances will be created logically by the events in the game world.

PCF: We hesitate to use the term 'interactive movie', but with *Alan Wake*'s cliffhangers and

episodic structure, do you see this as the future of PC gaming?

SL: We are working very hard to tie the story and the gameplay together, and to make the story part of the game so that the player is in control and playing the story, pushing the story forward with his



Alan Wake's DX10-powered environments rock.

actions. We would hesitate to use the term "interactive movie" as well, as it has negative connotations. *Alan Wake* is a game first and foremost, but the player will experience many dramatic moments similar to movies during play.

TV series are a source of inspiration for themes, atmosphere, storytelling and especially for pace. The length of a season of a TV series is close to the length of a computer game. And that addictive feel you get when watching a good TV series from DVD and thinking that you really should stop for the night but you end up watching just one more episode anyway, that's the feeling we want the player to get when playing *Alan Wake*. It is not a jump into something completely new, rather *Alan Wake* feels like a logical step forward to us, taking some of the things that worked in our previous games further. We are making a game we ourselves would like to play. **PCF**



Jim Rossignol
LIGHTER THAN AIR

Watchthisspace

THE FUTURE IS HERE. JIM ROSSIGNOL PLUNGES IN

Return of the airships

The lighter-than-air revolution continues, eighty years on...

The vast shapes of the lighter-than-air domes of the airship could soon be finding their way back into our skies.

While ever since the great Hindenburg disaster of 1937 the airship has declined in popularity, it looks as if the unique design could soon be making a comeback.

The most likely use for the new designs are military airships that will be able to fly at super-high altitudes and oversee battlefields. The ships will sit above zones of conflict and be

able to direct troops and spy on enemy movements. Lockheed Martin has had such designs in progress for almost a decade and the US military continues to fund research.

Other projects such as the air-yacht (the white sphere pictured here) have been popular with private owners, although they're not exactly cheap. Even the Zeppelin name has found new life in a German company that's carrying on their early 20th century work to create a modern range of commercial airships. Most exciting of all is the Aeroscraft project, which

intends to create a hybrid 400-tonne air hotel, which will only lift two-thirds of its mass via lighter-than-air helium, and rely on conventional aircraft dynamics for the rest.

Not all lighter-than-air projects have been successful, however, and the CargoLifter project that had been so highly praised in 2004 has now collapsed, with its immense dome hangar being turned into a tropical swimming pool. Nevertheless with a bit of luck and some pioneering spirit we'll once again see the skies playing host to these beautiful machines. www.aerosml.com



Airships are alive on the drawing boards, but when will they take to the skies?



Aircraft blood cells?

New research being carried out between Pittsburgh University in the US and Bristol University in the UK has come up with ways that damaged aircraft and spacecraft might 'heal' themselves. The Bristol team have pioneered a system of tiny tubes that will bleed repairing materials into damaged areas.

Meanwhile, research in the US has shown that

microcapsules of fixing polymers can be made to cluster around damage just like blood cells cluster around damaged areas of the body. www.aer.bris.ac.uk

This month in Science
December, 1942

The Manhattan Project reached its crescendo as the first atomic reactor was switched on and underwent the first sustained nuclear chain reaction. The reaction lasted for 33 minutes. The first working reactor was finally constructed in 1952.

Immersive

Playing Chopsticks on a harp made of light

Architect and digital artist Jen Lewin has been trying to expand the idea of what we expect musical instruments to be. Lewin says of her huge 40-foot laser harp installations: "The use of light instead of a physical string plays with our perception of space and matter. What is physically not there (the virtual string), responds as if it were."

By moving through the beams of the huge harps, the harpist is able to create cascades of noises and activate different ranges of sounds and samples that Lewin programs into the system. Since 1997 Lewin's created eight laser harps, with the largest being created for the Burning Man festival in the Nevada Desert in 2005.

However, we oldies at PCF wonder whether those of you who remember the light-shows of the 80s will think that Gallic instrumentalist Jean Michel Jarre actually invented the laser harp? You'd be right. www.blueink.com/lasers/index.htm



Avant garde instrumentations are popular.

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snipurl.com/bbcmmedia

This service by the BBC reports on media output from around the world, pooling snippets from a spectrum of newspapers and websites from each story's country of origin.

Media Matters

mediamatters.org

The king of media-comment sites, Matters monitors the output of the world's media, providing extensive analysis of the distortion of world politics. Essential if you want to know both sides of an agenda.

Sweet Jesus I Hate Bill O'Reilly

www.sweetjesusihatebilloreilly.com

One could accuse some monitoring sites of bias. Like this one, perhaps. Fox News' poster boy does, though, seem to give people reason to make comments, and few sites do it better than this.

The webpages

YOUR ESSENTIAL ONLINE UPDATE



Photo: Science Photo Library

The still somewhat oblique

Earth Day (does anyone know it's happening before they notice that Google's got globes in its logo that morning?) was the inspiration for OneWebDay, a day intended to draw all the inhabitants of the Earth together to celebrate how much they love the internet. It was on 22 September.

The best people were behind the international celebration, which wanted to bring together denizens of the web with collaborative art projects and general revelry. Cardozo Law School professor, Susan Crawford, was the event's organiser and Craigslist founder, Craig Newmark, was one of the day's main speakers at a New York rally – people with connection and clout. But perhaps their mistake was to deliberately steer the day's discussions away from the issue that the web currently needs



OneWebDay

In September, the internet gathered together. Did anyone notice?



Direct Action YOUTH AGAINST SUDOKU

Finally, an internet campaign worth getting behind. At long last people have been brave enough to emerge from the crowds and say what we've been in fear of declaring. We're no longer an oppressed minority, stamped down by the throngs who do not respect us. We have a voice, and dammit, we're going to use it! Sudoku is rubbish.

Youth Against Sudoku are a Finnish group whose website is translated into many languages, because its cause is one belonging to the world. Recognising Britain as the worst affected area, but also seeing the danger in their own homeland, YAS are taking Japan on, and demanding that they contain the hateful puzzle they let loose upon the planet.

Suji Wa Dokushi, you have had your day. YOU HAVE HAD YOUR DAY!
www.youthagainstsudoku.com



Empty spaces MAZAMEDIA

Mark Callahan is the Assistant Director for the Ideas for Creative Exploration (ICE) project at the University of Georgia in the US. The project promotes "innovative, interdisciplinary creative projects and advanced research in the arts." For seven years, ICE has been supporting art research and collaborative art projects. Mark also does pretty things on the web.

Perhaps the most striking of his website's collections is I.S.P (Internet Soul Portraits). The works are images of famous websites distilled down to their outlines and background colours, logos removed. Callahan describes this as the "application of essentialist, reductive strategies from a painterly tradition. It says a great deal about how familiar something as new as the internet has become."
mazamedia.com/isp/index.html



Consumergasm STRANGE MALL

As The Web Pages has shown you many times over the last two years, the internet is filled with some of the very strangest commercial products. We have two choices: steal dozens of links from Strange Mall and pretend we found them for ourselves months ago, or link you to it and inevitably have to work much harder.

Wow, we're great. Strange Mall is a frequently updated directory of the most bizarre bits and pieces your e-money can buy. Maybe you really need the Pet Peek – a clear plastic dome that can be fitted to a garden fence to allow pets to see through. It might be you're after the Serial Killer Calendar. Oh no, we know – it's the Wash Away Your Sins soap.

See if you can spot how many items we steal from here in future editions!
www.strangemall.com

cheering up about – the losses in the fight for Net Neutrality. It was to be a day of honest-to-goodness positivity, which, while a very commendable goal, just wasn't one that generated any media attention.

As we've reported previously, the cable providers and telcos are looking set to start charging premium rates for premium bandwidth – a cost that will inevitably get passed on to the users, and leave non-profit or smaller business sites in the information superhighway's slow lane. A day of organised international awareness seems too good an opportunity to be deliberately missed. Especially when it's sites such as Craigslist, with millions of users worldwide, that will suffer or close down should the premium bandwidth charges appear.

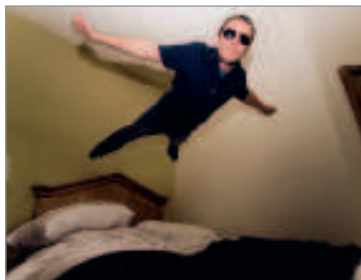
So could OneWebDay one day be the way ahead? It's going to take some changes. In the organisation's own FAQ, the question, "What exactly are the web values we're celebrating?" is met with, "That is up to you..." And this appears to be the problem: OneWebDay doesn't seem to know why it exists.

OneWebDay, however, intends to be an annual event, and plans are already in motion for next September's celebration. It's something with enormous potential, and already the right names are involved to kick some

ass. There's a year to develop the project into something everyone notices and enjoys. The site has a Project Wiki at www.onewebday.org/wiki, where anyone can add suggestions for the way forward.

While OneWebDay exists with obviously excellent intentions – a global day of recognising what the web offers – it seems that with such celebration could also come a call to fight to keep it functioning. **PCF**

"So could OneWebDay be the way ahead? It's going to take some changes"



Bouncy Bouncy BED JUMPING

There are some habits that, as an adult, you should really have grown out of, like having a wee in a swimming pool, or... oh, what are we saying? There are no such habits. Weeing in swimming pools is both big and clever, and they don't put purple dye in the water. Also included in this long list of things we definitely should never stop doing is jumping on the bed.

Bed Jumping is a valid sport, and indeed if Lawn Green Mousetrap is recognised by the Olympics, then we believe Bed Jumping deserves the position as well. For those of a like mind, bedjump.com is a collection of photographic capturings of the activity. While you're there, follow the link to its sister site, hotelthrone.com, archiving the state of various hotel toilets. And then go and jump on your bed.

www.bedjump.com



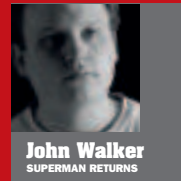
Truth Exposed UNDENIABLE FACTS

Did you know that the animal with the strongest vestigial appendages is the Australian kicking fish? Did you know that the human psyche weighs only five grams?

The author of this excellent site, Dan Serena, sees his collection of gibberish facts as a statement about the nature of society's lack of scepticism, and our willing gobbling up of any pseudo-science thrown at us. It's also an incredibly funny series of deadpan nonsense, presented with that same nauseatingly breezy approach that pollutes the sites he parodies.

There's an enormous amount of effort here, including video clips and a weekly cartoon, again capturing the pomposity of the site's targets. Also, did you know that two of a cow's four stomachs are used for creating their 'moo' sounds?

undeniablefacts.blogspot.com



Copyright watch

Three stories have caused much confused blinking and staring for **John Walker** this month

Warner Bros, in an effort to combat DVD piracy in China, are releasing a Mandarin-dubbed *Superman Returns* two months earlier than the rest of the world's versions, and charging less than £1.07 per copy. Attempting to beat the pirates at their own game, they're playing at being pirates. What message are we to take from this? That piracy encourages earlier release dates and fairer prices? WB, you might have made a mistake here.

Even more strange are the actions of the Swedish police in response to file sharing. In July 2005, when file sharing was made illegal in Sweden, the Swedish head of culture, Ivar Wenster, turned himself in to the police for downloading music in an effort to provoke discussion on the subject. But now the charges have been dropped, after Wenster's computer was apparently struck by lightning. The police, according to a report on The Register, laughed when told the news,

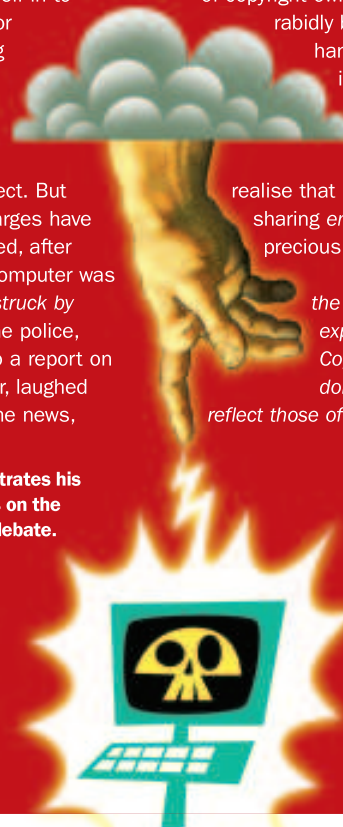
upsetting the culture honcho who explained his whole family had lost work on the now toasted machine.

Far more depressingly in the UK, the excellent TV nostalgia site, tv.cream.org, has been forced to remove the snippets of classic children's television theme tunes, due to the actions of the Performing Rights Society. Despite the popular non-profit site being one of the major instigators in the current boom of re-released old shows on DVD, thus making people such as the PRS lots of money, the short clips of decades-old themes were apparently too much to bear. It shows yet another example of the blindness that accompanies the greed of copyright ownership,

rabidly biting at every hand that feeds it. What will it take for these bodies to realise that such low-key sharing encourages precious sales?

Note – the opinions expressed in *Copyright Watch* don't necessarily reflect those of PCFormat.

God demonstrates his strong views on the file-sharing debate.



PCFMail



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DISCUSS HOT TOPICS AT forum.pcformat.co.uk

Mail of the month

When will we see games being developed to run on Linux without the need for emulators? Years have passed since I first installed Linux, despite an attitude that I would hold off upgrading until games are widely available I have made the shift already. The endless barrage of Internet viruses and spyware was all too much for me to bear.

An hour after making the shift my system was running perfectly until my old *Tiger Woods* just wouldn't run no matter what I tweaked. I am awaiting a reply from EA, but I feel that very little progress has been made in the past decade or so.

Linux is a fantastic operating system so why should it be shunned by the games developers?

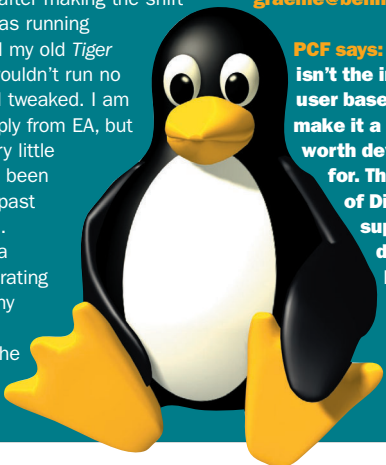
Is it all too much work to support one more platform, or has Microsoft made it lucrative for them to be the only supported software on the market?

At least Sony has seen fit to incorporate Linux into the PS3, I just hope that its Linux running the games. There may be light at the end of the tunnel after all...

GRAEME

graeme@bennachie-it.co.uk

PCF says: There simply isn't the installed Linux user base present to make it a platform worth developing for. The lack of DirectX support doesn't help either, as porting



Mail in and win

We've teamed up with ace memory supplier Crucial www.crucial.com/uk to give the author of our letter of the month a fantastic 512MB Gizmo! USB memory drive worth over £30. It works flawlessly with every version of Windows after Me.

You can air your views and write to the team at PCF Mail, PCFormat, 30 Monmouth Street, Bath, BA1 2BW, or via email at the address below. Or you can visit our forum at forum.pcformat.co.uk.

pcfmail@futurenet.co.uk

Patience, grasshopper

What happened to the workshop for Microsoft Virtual Machines? You promised it to us a couple of issues back, but it hasn't appeared yet.

CHRIS DENNING

fremasley@btinternet.com

PCF says We should avoid making promises – you never know what's going to come up that seems more important. Don't worry though, we will cover this in some detail in an up and coming issue – it's actually a really funky tool for running old games in DOS, or for trying out different operating systems without upsetting your current status quo. If you want to dabble with Virtual PC, then you're better off just diving in and having a play around – at least until we do that promised workshop.

Hidden delights

Having recently upgraded to XP, I had a wee swatch at the "Value

added" folder on the CD. In the folder I noticed a sub-folder "MSFT" which again has a sub-folder titled "NTbackup". I was pleasantly surprised to note that this appears to be a backup utility that hopefully would allow me to backup my hard drive to DVDR/CD etc. I have not used the program yet but I thought I would let the many readers of your fine publication that this utility can be installed from the XP CD.

IAN STEELE

choagy@btinternet.com



PCF says: Microsoft has hidden this on the CD because they thought it was too complex for normal people to use. It's not: it's a wizard driven little app that makes backing up easy, although you can't backup directly to a DVD or CD, you can backup to a file and then copy that on to your disc of choice.

A long time ago...

I was just wondering if there is anything out there similar to *Star Wars KOTOR2* around? I have just



Squad-based Empire-bashing gets a big thumbs-up this month.

completed the game, and now found myself addicted to RPGs, I wondered if you could point me in the direction of something similar, or indeed tell me if there is to be a third instalment of *Knights of the Old Republic*?

M.KEMPSON

Mikeykempson@aol.com

PCF says Depends on the parts of the game you like. If you enjoy having your morals tested, then *Vampire: The Masquerade – Bloodlines* comes highly recommended by everybody here, as does *Neverwinter Nights 2*, which is by Obsidian Entertainment, the team behind *Knights of the Old Republic 2*, no less. And yes, rumours are that *KOTOR III* is in development.

Dark mistress

Thank you for 'rediscovering' *Dungeon Keeper 2*! I dug out my old copy that I hadn't played since the old 3DFX days and straight away it sent tingles down my spine as the hilarious opening sequence ran. I didn't even notice the slightly cruddy graphics because of the addictive gameplay and humour



iTunes 7's various bugs have enraged you, it seems.

that courses through the game. I reckon it beats all subsequent god games by a country mile, thanks to its near-perfect sense of balance. It's still the benchmark in my book. Thanks again for reminding me of it.

Jmatthew@perrins10.wanadoo.co.uk

PS Since I started playing it again I have lost eight stone, my job, my wife has left me and all my pets have died – but it was all well worth it!

PCF says Good to hear we've managed to ruin the life of a loyal reader once again. Right, back to World of Warcraft for us...

Stop press!

I'm really surprised there's no mention on your website at all, apart from a brief missive on the forum, about the problems people are having with iTunes 7. If you check out the Apple forums and some of the independent iPod forums, a lot of people have lost patience with the new iteration and have switched back to version 6.

Issues with the most recent update include poor sound – stuttering playback and files sounding like they're on very old vinyl, rather than lossless digital format. Also, iPods sometimes fail to connect after upgrade. The new gapless playback option, or possibly the new cover art function, deletes or removes links to tracks. Some of the tracks removed are those purchased from the iTunes Music Store and have seen some people losing more than 50% of their libraries.

The general feeling is that Apple rushed iTunes 7 without adequate testing because of a recent show where an announcement about new iPods was going to be made. Apple has a lost a lot of credibility over this.

As mentioned above I'm surprised that this isn't headline news on your

site. Did you decide not to cover this for some reason? Surely members of your staff are iPod users and would have upgraded like everyone else once iTunes 7 became available? I've also checked out the November issue of PC Format to see if the issue was discussed. I wanted to learn more about what happened, and check out possible solutions to the problems, but I couldn't find it in their either. The cowering paranoid in me suspects some sort of conspiracy afoot to keep the problem out of the headlines.

MALCOLM kulutuu@aol.com

PCF says You're right of course: it's all a conspiracy to bring down... erm... something... we're not sure what, but we're determined to bring it down. Oh no wait, this is about iTunes 7 needing a patch, sorry we got confused for a second there. Erm, patch it to version 7.01 and you should find all your problems disappear, along with your request for the world-is-about-to-end headlines.

You've hit the nail on the head though – by rushing out the new version untested, Apple hasn't done itself any favours. Our advice? Don't automatically upgrade to the latest version just because it asks you to – we've been running various versions of iTunes 6 in the office without seeing any compelling reason to upgrade for about seven iterations now...

We've fluffed up...

In our DDR800 group test (PCF 191), we mentioned that Kingston buys in memory from other manufacturers. We'd just like to clarify the fact that this is standard practice for nearly all manufacturers, and not in any way a bad thing!



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PN: 102300



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Hot List 2007

Christmas is coming and the goose is getting fat, so it's high time you started dropping a few hints about what you'd really like Santa to head down the chimney with...





USB Turntable

I have crates of records, but haven't had any way of playing them for at least four years. This funky deck is exactly what I need to take a trip down memory lane, and it makes the whole conversion process ridiculously easy, too.

£120 www.firebox.com



Bush WiFi Radio

Internet radio is wonderful, bizarre, eclectic, ridiculous, and a thousand things in between. Standalone radios tend to be overly complex and crap looking. Bush's device is much easier to use, looks the part and sounds great too. Nuff said.

£120 www.argos.co.uk



The Burning Crusade

Unashamedly a *World of Warcraft* bore, this is a total no-brainer for me, regardless of whether it's good or not. Luckily, I'm on the beta program, and it looks as if Outland is exactly what's needed to get me through the dark months ahead.

£30 www.wow-europe.com



Sennheiser PC160

I'm currently hooked into *Ventrillo* using a Skype mono-headphone, which to be honest is just plain crap. These on the other hand, are lovely. Comfy ear cups for those extra-long *WoW*-marathons, and the mic picks up all those important grunts, too.

£80 www.sennheiser.co.uk

Alan's list...

It can't be that time already? But I didn't get the things I wanted to done... possibly something to do with *World of Warcraft* taking over my time. I need other distractions than Azeroth...

Microsoft Xbox 360

Cue the violins: I've never had a console, always been more of a PC gamer than an after-pub kind of chap. The Xbox 360 is the first machine that's made me want to change this. *Geometry Wars* is amazing, *Dead Rising* is clearly the nuts, and it's all HD, too.

£280 www.firebox.com



All's list...

Some full-on geekware for me this year. The only thing missing from my list is a Ducati motorcycle, but I fear Santa might bog off on it himself, so I'll play it safe with some rig-pimping

Scan 3XS Isotope iX

With quirkiness and bling built in at atomic level, the latest Isotope chassis from Scan Computers is a unique piece of tech. There'll be a spot of bother when Father Christmas gets it wedged in the chimneypot, but then, the logistics of his job aren't my problem.

£234 www.scan.co.uk



Corsair Dominator

No, it's not a comb, and it doesn't come with a piece of tissue paper to turn it into a kazoo. It's Corsair's latest memory, the XMS Dominator. Outsripping 1,066MHz RAM by 45MHz out of the box, it's fearsomely fast, low-latency stuff (4-4-4-12), and even comes with an optional fan unit.

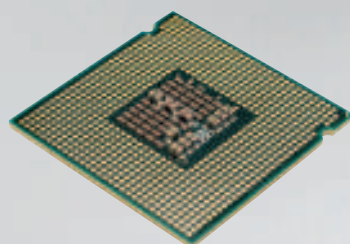
£469 www.corsair.com



Core 2 Quad

After seeing *Alan Wake* in action at the Autumn Intel Developer Forum, there's just no two ways about it: I simply *must* have a quad-core CPU. The Kentsfield core (see review on page 70) enables multi-tasking like no other processor. Paired with a G80 or R600 graphics card, this puppy sits at the heart of my dream rig.

£700 www.intel.com



Gateway MX6922B

Granted, this lappy doesn't offer demonic gaming grunt. Rather, it offers crisp performance at an extremely competitive price. If I was in the market for a general-purpose notebook with a 1.6GHz Core Duo CPU, a lovely sharp screen and a fat 100GB hard drive, this would be my budget mobile 'pooter of choice.

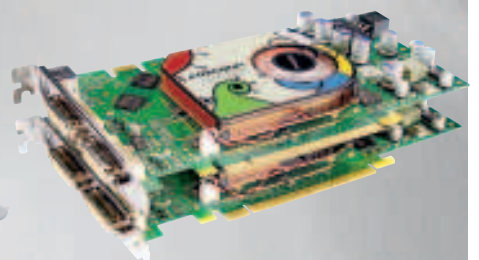
£599 www.gateway.com



Foxconn 7900GS

Obviously, I want the best graphics card setup in the world. Sadly, Santa's pockets are rarely so deep. On shelves now is the excellent alternative that is the 7900GS, available for the sum of £135. Bosh a pair in your rig for less than the price of a single 7900GTX and you're made.

£135 www.foxconn.com





Dave's list...



Still bitter after my summer holidays, which involved putting up tents in the rain, I want something I can shut myself in the car with while my fiancée battles with uncooperative canvas...

Nextbase SDV1102

Complete with a Freeview digital antennae as well as a standard analogue aerial, this beautiful portable DVD player is right at the top of my list. The 10.2-inch display outputs at a respectable 800x480 resolution and supports movies off flash disk too.

£325 www.3wisemonkeys.co.uk



Dell 3007WFP

Still struggling and straining my poor eyes with a 15-inch CRT at home, the 3007WFP 30-inch widescreen monitor is the ultimate choice. Finally, I'll be able to have both *Football Manager 2007* and *Eve* running, while watching the latest series of *Deadwood* too.

£1,365.35 www.dell.co.uk

Zalman Fatal1ty FS-C77 CPU Cooler

If your rig's running hotter than a marathon runner in the Sahara and louder than Jonathon Ross' suits then the Fatal1ty is for you. Forget the shamelessly naff branding and embrace the winner of our PC cooling feature in *PCF191* – it's a bargain.

£37.99 www.quietpc.co.uk

Football Manager 2007

The best game in the world. According to me anyway. The cutthroat world of football is fertile ground for an RPG and the latest in the brilliant *Football Manager* series from Sports Interactive ploughs that particular furrow in expert style.

£30 www.footballmanager.net

Navicore Personal

The sample we had in was an absolute godsend while testing out in the wilds of deepest, darkest Wales (where all the signposts inexplicably only told us where we'd come from.) I want my very own. Please, Santa.

£79.95 www.mobilefun.co.uk

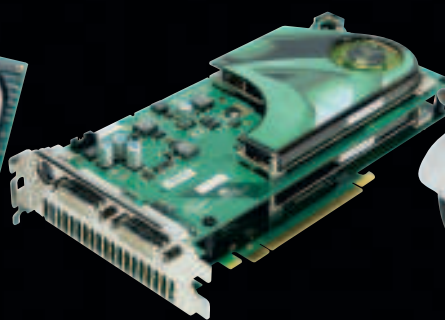




Intel Core 2 Duo Extreme X6800

Quad-core? I don't need no stinking quad-core! Core 2 Duo in any flavour is nice but this Extreme edition goes on my list for sheer grunt. At 2.93GHz with a 1,066MHz Front Side Bus and 2 x 2MB Cache this beauty is an absolute must for me.

£640 www.scan.co.uk



1GB 7950 GX2 graphics card

Staying with Two Is Better Than One theme, the masterstroke of putting two cards in SLI on one PCI-E slot appeals to me. While the potential for quad SLI this schizo card offers is enticing, there's more than enough grunt in this chimera for me on its 'own'.

£355 www.scan.co.uk



eMagin Z8000 3D Visor

It may not win you any style awards, but there's a lot to be said for this eMagin's 3D wizardry (see the Total Immersion feature on page 107). It's on my list because, while I could never justify *buying* one, my inner Lawnmowerman wants one.

\$549 www.emagin.com



Medieval II: Total War

The only game I'll be playing this Christmas. And I mean that quite literally. 'James, come and carve the turkey.' 'One sec love, they want to make one of my cardinals Pope.' For me, the Queen's Speech will be a call to invade Arabia. God, this game's brilliant.

£34.99 www.totalwar.com

James's list...

Christmas comes but once a year and it's the only time you get the emotional leverage to blag the *cool* stuff you want but can't convince yourself it's worth spending the fuel bill on...



Wacom Cintiq 21UX

This combination graphics tablet and monitor does away with the only real barrier in digital art, namely getting used to looking at a screen while drawing somewhere else! With Wacom's Cintiq range you can get straight into making great pictures right on the screen.

£2,000 www.wacom-europe.com

Mike's list...

I'm infatuated with anything that has an engine, four wheels and goes like stink. So there's an automotive bent to my list. Still, you don't need to know what spark plugs do to love Scalextric

Logitech G25 Steering Wheel

For a PC petrolhead, this is the holy grail of peripherals. Having a sturdy, responsive steering wheel with a six-speed gear shift and stompable pedals is essential for driving sims such as *GTR2*.

£150 www.it247.com



Behringer USB Guitar

Seeing as I sing and jump around the office like Zebedee, perhaps the best outlet for my energy is to become a rock god. I still need to satisfy my techie needs, so an affordable USB guitar that's packed with effects is perfect.

£80 www.lifeismusic.co.uk

RACE - The WTCC Game

After *GTR2*, I'm salivating at the prospect of SimBin taking on the hyper-competitive Touring Car discipline. Behind closed doors, the word is there are some online features to complement the panel-bashing racing. I can't wait.

£TBA www.race-game.org

Mustek DV5300SE

I've a fondness for Mustek's web-quality 'toy cams'. As a demon on the ski slopes, I need something that will survive a harsh environment, so £400 'corders are out of the question. The 640x480 DV5300SE, however, is perfect for those YouTube vids.

£60 www.cclonline.com

Scalextric Sport World

The problem with Scalextric is that when you want to play, there's nobody around to taste your tyre smoke. With Sport World this isn't a problem. Simply plug your old set into your PC and boot up the 3D app.

£115 www.scalextric.com



Stocking fillers...

Getting loads of expensive pressies is greedy, but scoring lots of little ones is a different story...



USBCELL batteries

Christmas sees a peak in battery demand in most households. USBCELLs make recharging a cinch, so they're they're perfect stocking fodder. **£13** www.usbcell.com

OCZ Rally

If speed is key, grab yourself one of these. There may be only 1GB to play with on this model, but ye gods, the file transfer is as quick as lightning. **£23** www.pcgiant.com

SkipDr

This may seem like taking a cheese grater to a football injury, but actually scratching and polishing away damage to discs works extremely well. **£25** www.gameseek.co.uk

DJ Control MP3

Replace those ageing wheels of steel with an MP3-ready USB mixer and ensure that your New Year's Eve party goes anything but Pete Tong. **£59** www.pixmania.com

Yamamoto Deep Red

Got a Skype fiend to buy for this Christmas? This cheap and extremely cheerful USB widget brings the joy of phone conversation to your beloved PC. **£15** www.picstop.co.uk

Enermax Aurora

This is the keyboard of choice for two of PCF's busy scribblers. It's an extremely handsome peripheral, particularly in brushed aluminium. **£59** www.scan.co.uk

Sennheiser CX300

Finally, some noise-blocking phones that you don't have to flog a kidney to be able to afford. Perfect for music fascists who have to hear everything. **£30** www.goaudio.co.uk

Missile Launcher

In these unstable geopolitical times, it pays to defend yourself. A USB launcher won't stop Kim Jong-Il but it's still hilarious around the office. **£30** www.netpcdirect.co.uk

Win our Christmas list

Christmas is a time for giving, and we're going to give you the opportunity to win this little lot...



Let's face it, you're going to be broke after buying all those Christmas pressies for your loved ones. This means there's not going to be much cash left to treat yourself, and without spoiling your Christmas before it's begun, the chances are that your stocking is going to be filled with socks and hankies rather than gorgeous tech toys.

The good news is that you don't need any cash to win the items on this page; you simply need to win them. And winning is a gift in itself, so it's like two massive prizes in one. We're giving this stuff away as well,

which makes us happy, which means that everyone wins. Such a pleasure.

There's enough here to please even the most hedonistic of us too. With cherry picked items from everyone's Christmas wish list, and giving you the chance to win the lot. This includes the wonderful laptop from Gateway, the Sennhesier PC160 gaming headphones, the portable DVD player from Nextbase, *Medieval II: Total War* and even the Behringer USB Guitar. That's a lot of lovely kit to open, and even if you don't want it all, surely someone you know would appreciate it. **PCF**

HOW TO ENTER

So, you want to stand a chance of winning this pile of lovely kit? Simply point your browser at www.pcformat.co.uk and the follow the link to the competition page, and the answer this fiendishly Christmassy question.

What is the name of Scrooge's partner in the Dickens classic *The Christmas Carol*?

- a) Jacob Marley
- b) Bob Cratchit
- c) Old Joe

New **PC**Format

It's going to
be one hell
of a ride...

- ✕ Bigger! Game reviews, in-depth guides
- ✕ Better! Performance kit, workshops
- ✕ More! Attitude, entertainment, fun



On sale



22 December

Rise of the robots



Tom Burick has built a bot – and he reckons that sooner or later, we'll all have one. Gary Marshall hails our new robotic overlords

The CEO of White Box Robotics (www.whiteboxrobotics.com), Tom Burick, is responsible for the 9-series PC-BOT, a mobile robot that's based around standard PC components. "I've been building robots since I was a kid," Burick reveals. "All the other kids in kindergarten were making clay ashtrays, but I was making clay robots. I can't remember a time in my life that I wasn't building them." It was a TV programme that turned Tom's interest into a full-blown obsession. "*Lost In Space* really captured my imagination," he says. "It was incredibly cool to me that Will Robinson had a robot that was his best friend and protector. Because of that, I made it my life's mission to make personal robots a reality... I wanted to capture that robot's essence and use it to develop a real personal robot."

The £3,000 PC-BOT is the result of that ambition, and despite the price tag it's already selling. "Keep in mind that this is a first-round product,"

Burick says. "This iteration of the robot is built in North America using low-volume, speciality manufacturing processes and all the bots are hand-assembled. The upside is that they're true, commercial-grade robots with tank-like construction, and we've had strong sales from educators, OEM partners and hardcore robot/PC enthusiasts."

So what do these customers get for their money? "Out of the box, the 914 has autonomous navigation capabilities, telepresence/teleoperation functions, a differential drive system, speech synthesis and speech recognition capabilities, a GUI-based control application and Linux drivers," Tom explains. "The current Windows-based software allows enthusiasts to use the robot as a home or office security bot, among other things."

A security bot? Given Windows' well-publicised security vulnerabilities, is that a good idea? "You don't necessarily have to use Windows as the OS,



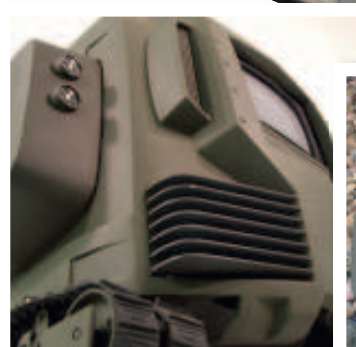
PC-BOT's creator would like the robots to become as ubiquitous as desktop PCs.

although we've had great results using it in security apps," Burick says. "We also offer Linux drivers for enthusiasts to develop their own security apps." Fair enough. But surely if you've got a security bot worth five grand, someone will nick it? "You're not going to get very far," Tom laughs. "First, his cameras are rolling and uploading the video of you stealing him. Secondly he's heavy – almost 50 pounds, so you'd better start exercising in advance if you plan on stealing one. And lastly, we're working on an 'I've been lifted off the ground' siren that is quite unpleasant to the ears."

Burick is the first to admit that if his robot is to become a mass-market product, the price needs to plummet. "Affordability is critical to the success of the PC-BOT," Burick says. "We've been working with a Chinese manufacturing partner for the last three years to produce an identical looking, lower cost consumer version of the 914 bot for under \$2,000 [about £1,100]. That includes all of the PC components. And we're also working on a do-it-yourself platform that doesn't include the computer parts and which will be well under \$2,000. Think of it as a barebones platform – just like a barebones PC you'd add RAM, a hard disk, CD and so on."

The PC-BOT isn't the first robot aimed at home users – even Sony tried it, but canned the Aibo earlier this year. So why does Tom think the PC-BOT can succeed where Sony failed? "Sony did OK with the Aibo, but got it wrong with the footprint. Even as a 'robot guy', I never purchased an Aibo... I always viewed it as a motorised plastic dog. I wanted a robot, not a beagle."

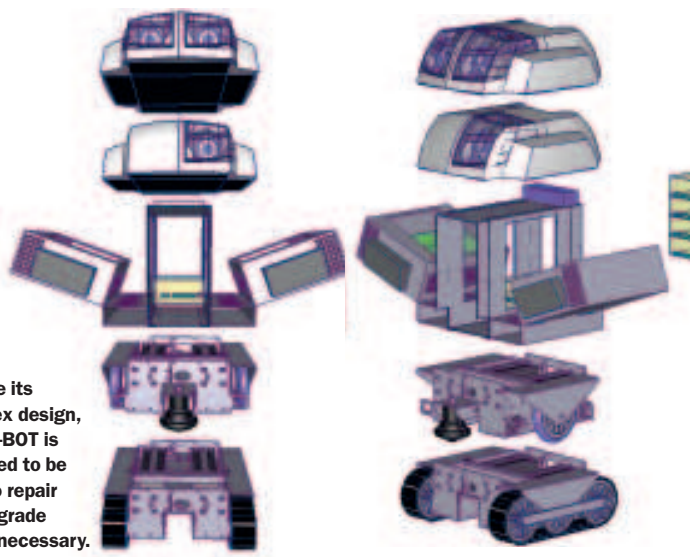
Cutting the cost of the PC-BOT is only part of the plan. The PC-based architecture makes the bot easy to build, upgrade or repair, and that means it can be modded too. "The modding communities are vitally important to me," he says. "It's my wish that enthusiasts will take the 914 and develop applications that I never dreamed of... this truly is a community effort."



The 914's Linux-based GUI makes it easy to configure. The robot has numerous security and home assistance applications.

"Out of the box, the 914 has autonomous navigation, speech synthesis and recognition, and can be used as a home or office security bot, among other things"

Burick's long-term vision is of the PC-BOT as the ultimate assistant, a faithful friend that follows him everywhere and destroys his enemies with its awesome firepower. Admittedly, we're lying about the destruction bit, though. "I want the PC-BOT to be as common as the PC," Tom says. "It reminds me of important dates and anniversaries, it gives me GPS directions to my destination – he's in the passenger seat of my car – and provides intelligent and sometimes amusing artificial intelligence driven conversation. He follows me around the mall and transports my purchases, sweeps my floors as he's patrolling my home for intruders, and allows me to monitor my elderly mother over the internet – and that's just for starters." So what's the ultimate aim for the PC-BOT project, then? Tom laughs for a moment, before announcing: "To rule the world!"



Despite its complex design, the PC-BOT is designed to be easy to repair and upgrade where necessary.



The PC-BOT's integrated cameras, microphones and movement sensors allow it to interact independently with its environment.

Turn
the
Page

Inside the bot



Never mind how many tasks the robot will do for you – how on Earth does it work? We took a chisel to that shiny casing and found out

Although PC-BOT's head boasts a Logitech webcam and a bright light for illumination, it doesn't use the webcam to see: it's there for video recording or for you to peer through from the comfort of your PC. The bot's real 'eyes' are infra-red detectors mounted on the robot's torso.

There's not much point in having a robot permanently attached to a cable, so PC-BOT includes an 802.11g WiFi card to upload video content and receive commands.

Three long-range IR sensors keep a constant eye out for drops or stairs, to prevent your bot from taking an expensive tumble. This is the robot's voice box, an off-the-shelf speaker system that fits into a standard 5.25" drive bay.

It looks like a DVD drive, and it is – albeit a custom-made DVD-ROM/CD-RW combo drive with two integrated USB ports. The custom drive was originally designed for laptop PCs.

The PC-BOT is built around a VIA EPIA SP13000 Mini-ITX motherboard, with two rechargeable 12V lead acid batteries powering the two M2-ATX power supplies. The batteries are charged by a SONEIL 12 charger, which is also hidden inside the unit and which connects to a wall socket for simple recharging.

With 1GB of DDR RAM and a 40GB 2.5" SATA HD, the PC-BOT is hardly the most souped-up system, but it's adequate for XP Home – which is handy, because that's what the Brian robot control software runs on. You can extend Brian's capabilities with Microsoft's Robotics Studio software, which once again runs on Windows. For expansion, the Machine Management Module – which controls the bot's motors – is hooked up to an I/O board boasting eight analogue inputs for IR or other sensors, eight digital outputs, eight digital inputs and two USB ports. If that's not enough, you can add a second I/O board and quite possibly a toaster.

More 'eyes': this is the bot's collision avoidance system, which employs three IR sensors in the front of the unit and one at each side. These sensors talk to 'Brian', the bot's software system.

The PC-BOT travels in style, thanks to its differential drive train with independent front suspension. Twin DC stepper motors pump up the voltage so it's powerful enough to drive the wheels, and the rollers are self-cleaning to keep things moving smoothly.





the year in games

So, 2006 wasn't a vintage year for PC games, eh? [Alec Meer](#) says it's been one of the best...

Things were never meant to be this way. The PC gaming landscape had changed astonishingly in 2005 – the hair-pulling catfight between *Half-Life* and *Doom* resulted in an undisputed victor and a whole new set of rules for the FPS. Then *World of Warcraft* changed everyone's preconceptions

about whether the planet really was ready for online gaming, and shattered the persistent myth that developing games on PC was a fool's errand. It was, friends, a very good year.

So, it wasn't rampant idiocy to expect 2006 to be something of a recovery period for the PC. After all

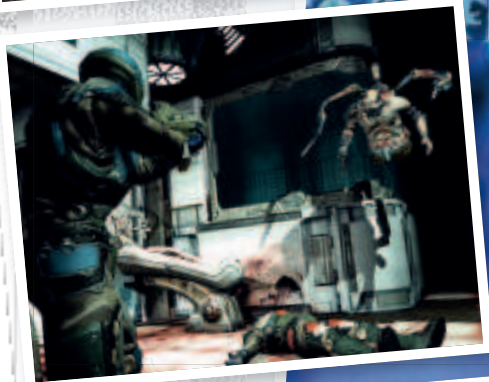
that, the aged jogger surely deserved a nice sit down to catch its breath and chew a Fisherman's Friend for a while.

It caught its second wind incredibly quickly, though, shaking off the winter cramps to stride into a rather spectacular spring. The increasingly formidable return of the

indie game and a lot of clumsy ball-dropping by the console boys throughout the course of the year only consolidated the PC's place at the head of the pack. So over the next eight pages, we raise a glass to the best games of 2006. The PC's done us proud, and shows no sign of slowing down.

The quiet frosty months barely
hinted at things to come

WINTER



High scorers

The best winter games according to *PCF*



TOCA Race Driver 3	88%
Eve Online: Red Moon Rising	88%
The Battle for Middle Earth II	83%
Dungeons & Dragons Online: Stormreach	80%
GridWars 2	80%
Commandos: Strike Force	84%
SWAT 4: The Stetchkov Syndicate	80%

JANUARY



It's safe to say 2006 was a vintage year for racing games, during which the PC flexed its muscles over consoles. *PCFormat* celebrated by hiring someone who gave a monkey's about them, with then-new writer Mike Channell getting his diapers in a twist about the high-budget thrills of *TOCA Race Driver 3* and the slightly rustic but mod-friendly *rFactor*. The jewel in the crown wouldn't come until September with *GTR2* – hailed as arguably the best racing sim ever.

FEBRUARY



Until February, unless you were into video re-encoding, dual-core CPUs had yet to earn their keep. The two-brained processors finally found mainstream use with patches for *Quake IV* and *Call of Duty 2*, with our tests revealing a performance boost of up to 70%.

Since then, dual-core gaming seems to have crawled off to die. No multi-threaded *Half-Life 2* (yet) or *World of Warcraft* and no new option in *Battlefield 2142*. With Intel Core 2 Duo changing the CPU landscape, 2007 had better make good use of our ninja systems. We'll have more on Valve's plans next issue.

MARCH



Signs that the web really has ushered in a new age of gaming, and that *World of Warcraft* really has taken over the planet, became apparent in a controversial fashion. Developer Blizzard took it upon itself to stop a guild from advertising itself as being gay-friendly over the in-game chat channel. It claimed its intentions were noble – to prevent a bigoted response from other players – but, Lord, did it suffer for it. Blizzard eventually withdrew its restriction and issued a public apology. Just a silly boo-boo? Time will tell.

Also in the news

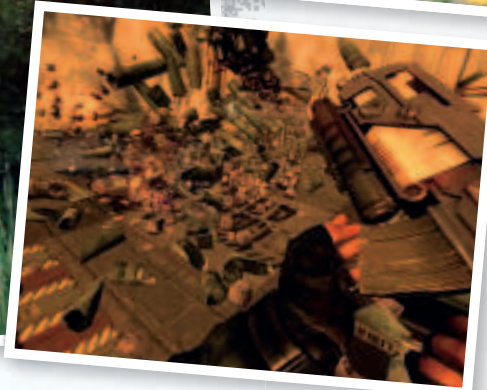
Other excitement during the winter

The episodic floodgates opened in February, with the first news of *Half-Life 2: Episode 1* (then more sensibly known as *Aftermath*) spilling into the ears of PC gamers. Pleasing them less was the first hint of Vista-only games. The announcement that hyped console dumbathon *Halo 2* was headed for the ol' IBM Compatible carried the riser that it wouldn't be playable on XP. Well, there's no Vista yet, so we can't confirm our suspicion that the game will be hacked to run on less bloated versions.



SPRING

A good season for gamers,
less so for goblins



High scorers

We spent Spring playing these...



Oblivion	93%
Lara Croft Tomb Raider: Legend	80%
Ghost Recon Advanced Warfighter	80%
Rise of Nations: Rise of Legends	90%
Guild Wars: Factions	81%
SCS: Dangerous Waters	84%
Heroes of Might and Magic V	82%

APRIL



Bookies' favourite for game of the year hit the shelves in March, and took over the world – *Oblivion*. Big and beautiful, in singleplayer it did a better job of creating a sense of freedom than most MMORPGs. Shame about the voice acting, pasty-faced characters and disappointing ending. Almost more interesting than the game was what grew out of it – the most active mod community since the days of *Doom* and arguably the first worthwhile downloadable add-ons.

MAY



Months of steam rising from the heads of furious gamers coalesced into a storm cloud that rained vengeance on StarForce. The game copy protection tech was accused of everything from causing system crashes to wrecking DVD drives, though its creators

dispute this. They didn't help matters when they publicly posted a link to a pirated version of *Galactic Civilizations II*, apparently to prove that game copy protection was necessary. UbiSoft responded to complaints by dropping StarForce from future releases. JoWooD and CDV have also stopped using it; hopefully, Codemasters will follow.

JUNE



Doctor Physics is in his surgery. Are you ready for your prescription? Turns out the answer was a big, fat no, with the AGEIA PhysX cards failing to set the world on fire. While the potential remains decent – and will hopefully be aided by the upcoming move to PCI-E – the current execution is less so. *Ghost Recon Advanced Warfighter* didn't benefit hugely from it, while hax0rs discovered that PhysX tech demo *CellFactor* could be tweaked to work without the special card. Half a year on, only 12 games support PhysX.

Also in the news

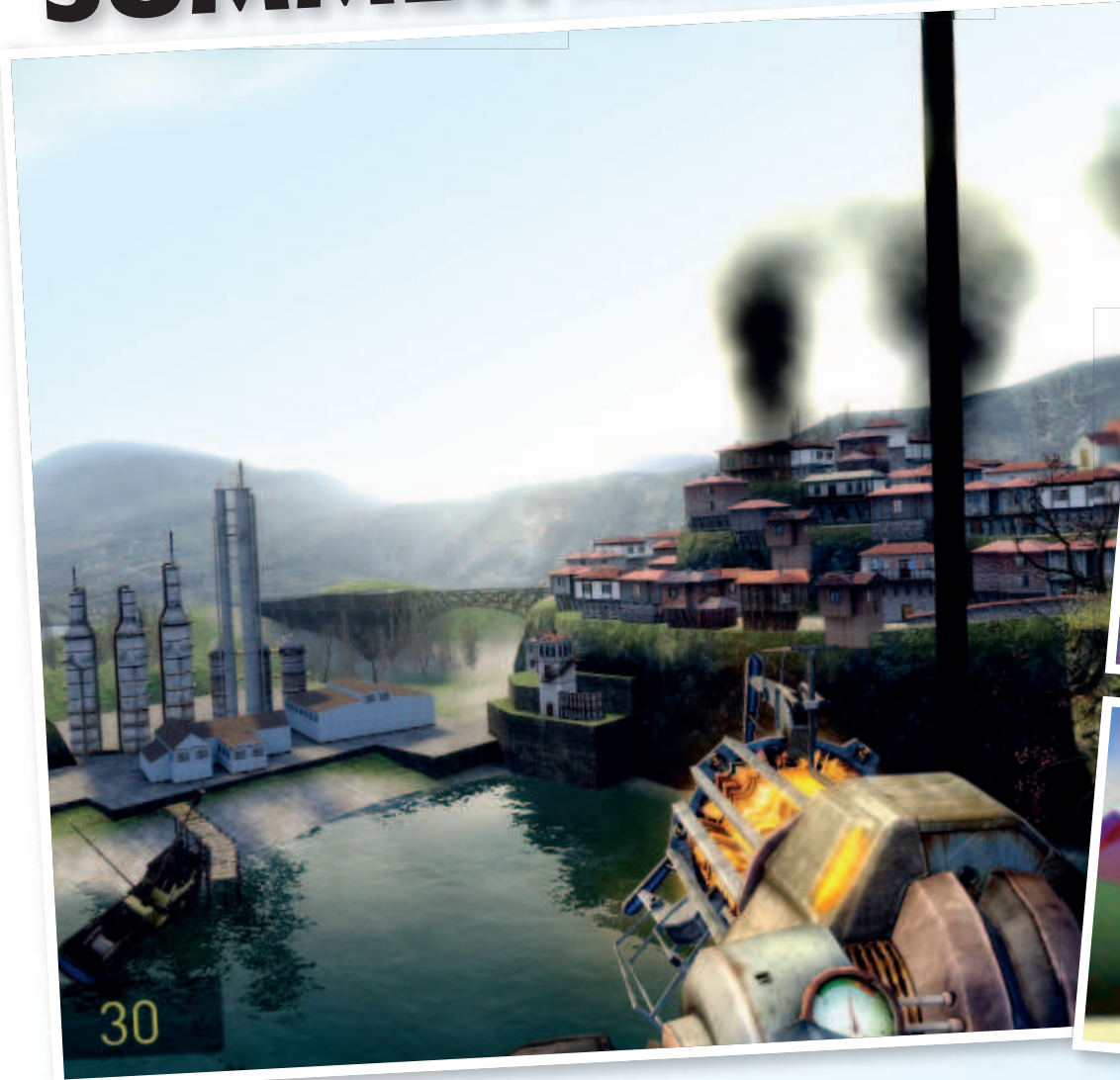
The season of renewal also saw passings

In May, E3 – the international gaming tradeshow in LA – breathed its last. The huge costs and organisation necessary to entertain the world's media was more than the games industry was prepared to shoulder, especially given that the web makes sharing information for free so much easier. But with the passing comes new breath of life. In spring, some of the PC's oldest names pulled themselves up by their bootstraps. *Tomb Raider*, *Heroes of Might and Magic* and *Hitman* offered their best instalments for some time.



SUMMER

Things really heated up on the indie scene



High scorers

Meet the boys of Summer. Play them



Half-Life 2: Episode 1	90%
Rome: Total War – Alexander	84%
The Movies: Stunts & Effects	86%
Outrun 2006: Coast 2 Coast	86%
Titan Quest	81%
Cloud	90%
Prey	84%
Age of Pirates: Caribbean Tales	80%

JULY



Episodic gaming enters the ring. The return of *Half-Life 2*, hot on the heels of *SiN Episodes: Emergence*, meant that the gauntlet was thrown down. They are officially the future – or are they? *SiN* was a steaming pile of throwback idiocy, *Bone* wasn't funny or clever and common consensus held that *HL2: Episode 1* was too short. The quality was high, but the fact that the *Episode 2* ships with two extra games suggests concerns about brevity have been addressed.

AUGUST



Last year it was gravity guns, this year, it was portals. *Prey*, which was otherwise a reasonable stab at a *Doom/Quake* bio-mechanical corridor shooter, introduced teleportation via rifts in space. It was immediately overshadowed by the trailer for

Portal, the *HL2: Episode 2* bonus game that features puzzles solved by spatial displacement. Not to be outdone, *Prey* soon benefited from a mod that enabled insta-portals – how do you shoot a man in the back when his back is suddenly on the ceiling of the next room?

SEPTEMBER (PT1)



Arise, indie game, your time is now. The tripple-whammy of turn-based beat'em-up *Toribash*, physics toy *Armadillo Run* and *Guitar Hero* clone *Frets on Fire* in early autumn was proof that great games don't require huge budgets. The unrestricted distribution of the web, plus increasingly powerful hardware, means indie developers have the resources to augment their imaginations. You don't feel robbed by a £10 digital download when the games are this good. With Live Arcade on 360 opening up new revenue streams for home-coders, 2006 was the year of independents. [▶](#)

Also in the news

The Summer sun went to their heads

The tendency of politicians in the US to use anti-videogame propaganda for self-promotion took a hilarious turn in July. The mayor of Las Vegas decried *Rainbow Six* for featuring terrorists in his city. Meanwhile, the roster of DirectX 10 games expanded. It was also revealed that *Alan Wake* (from the *Max Payne* guys) and *Crysis* (from the *Far Cry* guys) will look their best on Vista, with a suitable 3D card – a bit of a double-edged sword. The release of *F.E.A.R.*'s multiplayer component for free was more positive.



AUTUMN

At last it's time – let the games really begin



High scorers

As nights drew in, monitors flared up



GTR2	91%
LEGO Star Wars II: The Original Trilogy	88%
Call of Juarez	81%
DEFCON	83%
ParaWorld	81%
Company of Heroes	92%
Toribash	90%
Wik & The Fable of Souls	80%
Goliath	91%

SEPTEMBER (PT 2)



While previous months had their landmarks, this is the time of year when the PC really flexes its muscles.

Lego Star Wars II brought humour back to the table. The cowboy game was finally done well in *Call of Juarez*. RTS got the clip around the ears it needed with the sublime *Company of Heroes*. Dinosaurs became cool again with *ParaWorld*. Even *Age of Pirates* nearly worked. Meanwhile, Will Wright and Irrational proved 2007 was going to be a special year, with unveilings of *Spore* and *BioShock*.

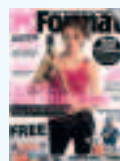
OCTOBER



Steam suffered some sharp criticism but as the year built, so its worth grew, with more interesting games added. In October, Steam just exploded – *Psychonauts*, one of 2005's lost gems, *DEFCON*, the awesome global war game from

British indie developer Introversion, *Call of Duty 1* and 2, the best WW2 shooters in the world today and *Dark Messiah*, the experimental and physical fantasy FPS were all available for knock-down prices. Buying a boxed game from a shop now feels entirely backwards.

NOVEMBER



It's a bad year for MMOs. *RF Online*, *Auto Assault* and *Dungeons & Dragons Online* haven't fired the public's imagination, with all-conquering *World of Warcraft* never even pausing for breath. The next run of Davids queued up for a job of their slingshots in November, including *Archlord*, *Lord of the Rings Online*, *Phantasy Star* and *Guild Wars: Nightfall*. But Goliath only became stronger – *WoW: The Burning Crusade* was the big deal in gamingdom, even while still in beta form. Will anything topple it? Much as we love *Warcraft*, we hope so. Six million subscribers is *unhealthy*.

Also in the news

We all did the dance of the download

The point-and-click adventure game won more headlines than it had for years. *Broken Sword 4's* return to tradition triggered a bit too much nostalgia in us. The rose-tint was entirely gone from our specs when the long-awaited, but tragically shallow, return of *Sam and Max* finally arrived. Nevertheless, both that and the superb *DEFCON* set an incredible standard for episodic game pricing – both at less than £10. Now these are the kind of prices we expect when publishers are left out of the equation.



reviews

All the latest games, gear and apps



Medieval II: Total War

Our scoring system

0-19% Unusable or astoundingly rubbish

20-49% Largely not worth spending money on

50-69% Some decent features but uninspiring

70-79% Accomplished without the must-have factor

80-89% Outstanding. Awarded Top Gear or High Score

90+ Exceptional. A PCFormat Gold Award winner

Our key promises

1. PCF has the most thorough reviews

We've been reviewing kit and games for 14 years. With over 8,500 reviews written, we have the most talented, dedicated and authoritative teams in the business.

2. Integrity is paramount

We never trade pages for exclusives, or review games not signed off as finished by the publisher. Where we've looked at reference hardware, we'll make that clear in the review.

3. The PCFormat Gold Award

Only when a piece of equipment or game exceeds our expectations in terms of innovation, excellence and value for money does it get one of these coveted honours.

4. High Score/Top Gear

It's a misconception that only 90%+ is an essential purchase. Anything scoring 80% or higher is festooned with one of these, making it one of the month's most highly recommended.

5. We want to know what you think

We are PC fans writing for PC fans, so please share your thoughts on new stuff in our forum: <http://forum.pcformat.co.uk>



Big rigs

PCFormat Experts

**DAN GRIL**

Got feudal with the large scale battles of *Medieval II*. Rewrote history at the Battle of Hastings in time for tea.

MOST WANTED

A full scale army

**ALEC MEER**

Fresh from his freelance office (sitting in front of *This Morning*), Alec looked at 2006's best games.

MOST WANTED

A reason to get up

**DAVE JAMES**

After working on the railroads all the livelong day, Dave still had a bit of time to test the excellent *Radiotracker* app.

MOST WANTED

Some obscure song

**MIKE CHANNELL**

Cried out in anguish at just how horrible he'd made a shiny new Aston Martin with *NFS Carbon*'s autosculpt mode.

MOST WANTED

Turtle wax

**AL BICKHAM**

This month wasn't all about slathering over the 8800GTX. AI was still impressed by the plucky X1950 Pro as a budget card.

MOST WANTED

More pipelines

**JAMES CAREY**

Enjoying the simple pleasures of indie games was made all the more easy with the addition of four extra arms.

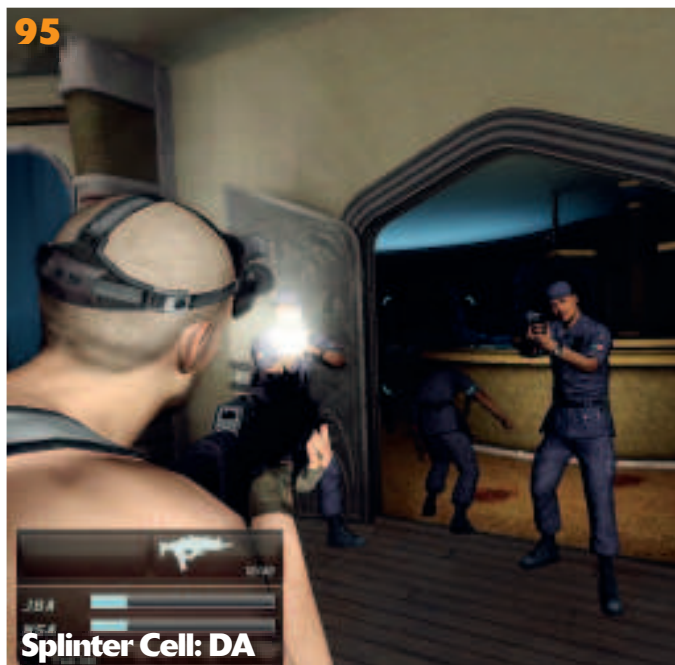
MOST WANTED

Six gloves

SUBSCRIBE NOW!
Turn to page 137 and never miss an issue of PCFormat again!



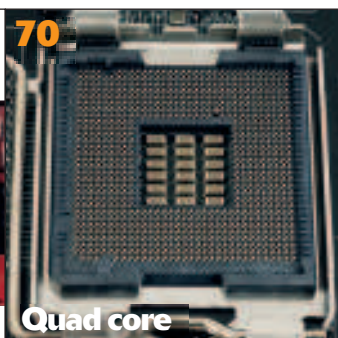
Corsair Dominator RAM



Splinter Cell: DA



X1950 Pro



Quad core

THIS MONTH

62

**>> NVIDIA 8800GTX**
Pixel pushing pugilist

Could this be the biggest leap between graphics card generations yet? It certainly looks promising, and everyone in the office has been wheeling out their favourite power hungry games to test it. Bristling with programmable pipelines and with 768MB of RAM on board, it's certainly a formidable foe.

83

**>> NFS CARBON**
Drifting away

Something like the 28th in the series, *Need for Speed: Carbon* is all about beautiful people and hideous cars. Ironing board sized spoilers, Pollock style paint jobs and exhaust pipes you could lose a small child in are par for the course. Can we get revved up again for yet another installment of this 'underground' nonsense?

98

**>> FLIGHT SIM X**
Plane sailing

Microsoft's flagship PC game makes a return, presumably with a manual you could flatten a bungalow with. Buzz Canary Wharf, visit the pyramids or compete in a Red Bull Air Race. Sounds good in theory, but how much thrust does it pack in reality? After all, there's only so many hours most people can bear to spend flying over featureless terrain to get to the landmarks...

PLUS

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FOR MORE REVIEWS...

Check out the PCFblog, where we bring you the best-informed opinions of new releases even sooner these young internet upstarts we keep hearing about. Head over to blog.pcformat.co.uk for regular updates. On the blog this month, you'll find:

>> Race: The WTCC game >> Zune >> WoW: Burning Crusade >> Visiting Valve



GRAND UNIFIED THEORY

This is the future

Shaders are dead, long live shaders! Adam Oxford gets it together with the first 3D card to feature unified shaders: the GeForce 8800GTX

Manufacturer Nvidia Price £400 (approx) Web www.nvidia.com

Whatever you thought you knew about graphics cards, it's time to prepare for a little brainache.

With the launch of G80, aka GeForce 8800GTX, NVIDIA has bested its rival ATI to the title of 'first DirectX 10 GPU' by – we reckon – at least three or four months. It's an impressive feat to be first off the blocks for Vista-based graphics, not only because ATI already has experience working with the new unified shader architecture of DirectX 10 (see *PCF194*) in its Xenos chip for Xbox 360, but because up until a month before launch, no-one in the world

thought NVIDIA could do it. Every pundit on the planet was convinced that the G80 generation would be another FX-style fudge for the guys in green, in that it would feature separate, DX9-style engines for pixel and vertex shaders. Consensus had it that it would be a fast chip, but not a true DX10 one. Consensus had it wrong...

Given the amount of scrutiny both

graphics firms find themselves under these days, it's quite an achievement to catch your competitor out like this. But it would be as significant as a drunken one-night stand in Faliraki if that was all there was to it. This is a card with which we're planning to have a deep and meaningful relationship.

ONE GIANT ALU FOR MAN

There are a couple of conceptual leaps you must make in order to

understand G80. Firstly, the concept of a shader pipeline as we know it has been completely thrown out of the window. These are hardware routes through a DX9 or less card that are heavily optimised for common tasks. They are





HOW WE TESTED

Running the rule over the 8800

THE PCF TEST BED:

CPU Intel Core 2 Quad QX6700 @ 2.66GHz
RAM 1GB OCZ Special OPs edition @ 800MHz
MOBO Intel 875

We pitched the 8800GTX up against the fastest available ATI graphics solution – two Sapphire Toxic watercooled X1950XTX cards in CrossFire formation – and the fastest current single card available, NVIDIA's own twin-tub GeForce 7950GX2. The games tests were run at a relatively sedate 1,280x1,024 initially, and then at an eye-watering 2,048x1,356 resolution.

Unfortunately our 30-inch widescreen monitor was out of action for this test, or we'd have pushed it even further...

Finally, we tried the 8800GTX in our Eye Candy rig from Cyberpower (see p.12) that features a brand new NFORCE 680i motherboard, a Kentsfield CPU and Corsair's new Dominator RAM. Graphics and motherboard came together to form what is, quite simply the fastest gaming platform currently available – almost 30% faster than our testbed in *Half-Life 2: Lost Coast*!



Everything is luminex-ated

NVIDIA's traditional weak spot buffed up

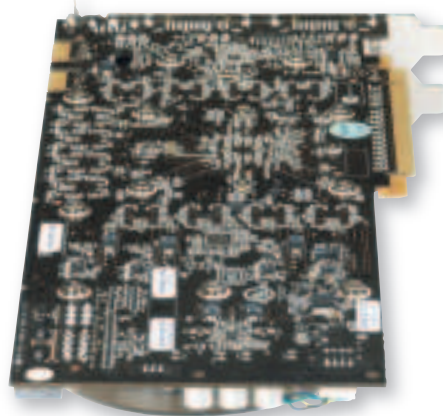
Another generation of graphics card, another ridiculous name for the post-processing picture quality engine. NVIDIA has dubbed this part of the G80 the 'Lumenex' engine, and it's capable of x16 anti-aliasing – which can be forced in none compatible apps like *Oblivion* – and x16 anisotropic filtering. Both have been refined over the previous generation to

catch up to at least as good as ATI's current offerings, generally considered to be superior.

On top of that, there's a dedicated processor for HD video that works with the stream processors to relieve the CPU of the burden of decoding high def movies. We haven't had chance to test video playback yet, but will be reporting back in a later issue.

"G80 is a completely redesigned chip based on a giant maths unit"

Photos Andy Short



at their most efficient when applying vector calculations to small blocks of pixels at a time. DX9 graphics called for separate vertex shaders – for calculating the geometry of a scene – and pixel shaders, for colouring it in. As time has progressed though, the limits of this approach have been revealed to the amount of silicon standing idle at any one time. In a PS-heavy scene – for example a dark, straight tunnel with lots of lights, pools of water and fresco details on the walls – the vertex units aren't being pushed anywhere near as

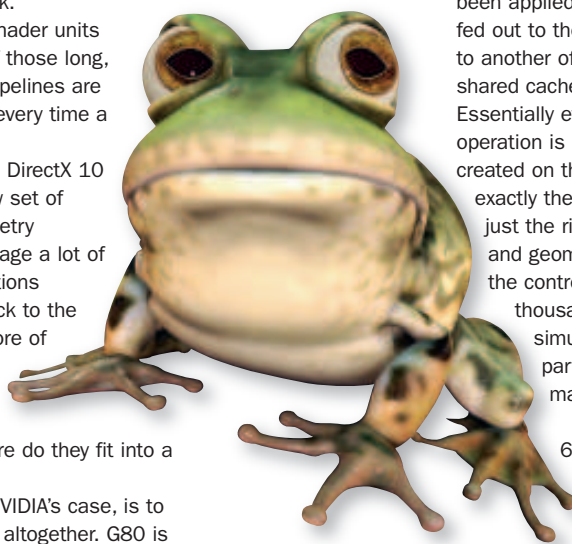
hard. In a more complex locale with lots of triangles being shifted around – for example standing on a cliff, looking out over a forest full of flora and fauna – the pixel shaders watch on as the VS units take on the grunt work.

Even within the shader units themselves, not all of those long, carefully structured pipelines are pressed into service every time a pixel is flung through.

On top of all that, DirectX 10 also introduces a new set of instructions for Geometry Shaders – which manage a lot of the mesh transformations previously handed back to the CPU, thus keeping more of the rendering work on the graphics card and speeding things up system wide. Where do they fit into a fixed pipeline model?

The solution, in NVIDIA's case, is to throw out the old way altogether. G80 is a completely redesigned chip based around a giant maths unit – in total it busts 700 million transistors – featuring no less than 128 'stream processors'. Essentially, each of those units is a fully

Look at the realistic slime on that frog. That's G80, that is.



programmable scalar processor, capable of performing one MAD and one MUL calculation per clock, and they're clocked at a whopping 1.35GHz. To create the old-style pipeline, once a calculation has been applied to a pixel, it can either be fed out to the frame buffer or passed on to another of the processors via the fast shared cache for some more work. Essentially every time a graphics operation is begun, the entire pipeline is created on the fly just for that pixel, exactly the length it needs to be with just the right amount of vertex, pixel and geometry operations. Because the controller logic can track thousands of these threads simultaneously, the entire 128-part ALU should be running to maximum capacity all the time. To finish this off, there are 64 decoupled texture units, a crossbar memory controller which yield 384-bits of throughput and 24 ROPs – all of which is included to reduce common bottlenecks in a traditional graphics processor.

Head spinning? Good. Now turn the page for the performance graphs...



World of stats

Watch the monsters growl their way through our gruelling tests

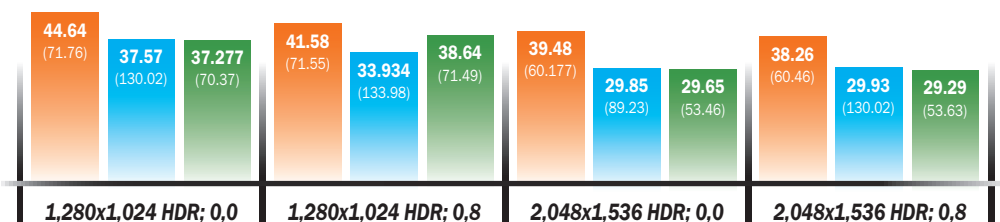
KEY

- GeForce 8800GTX
- ATI X1950XTX Crossfire
- GeForce 7950GX2

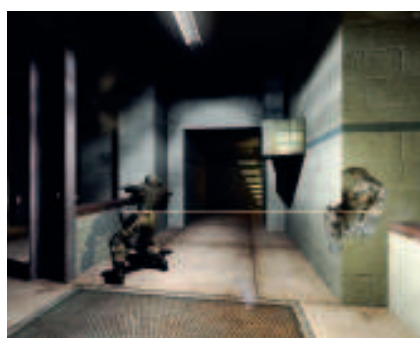
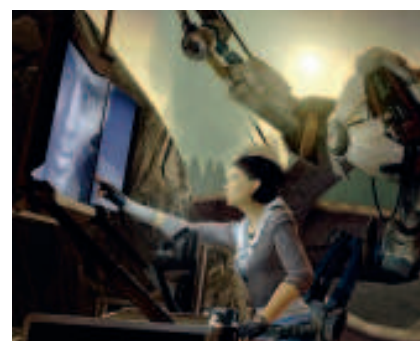
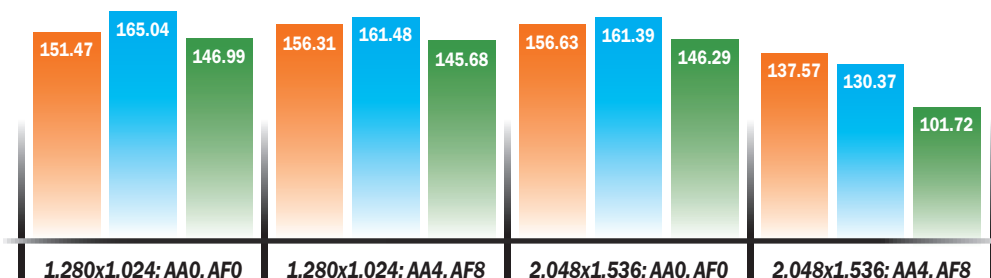


Oblivion

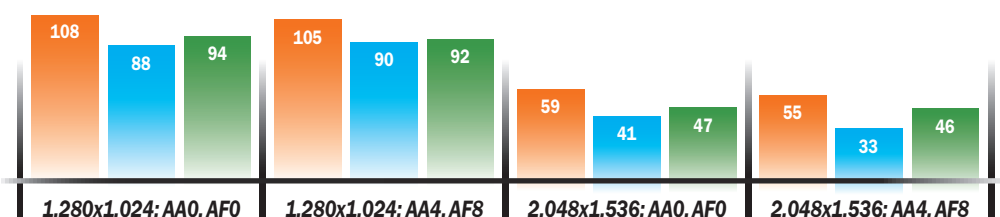
Score in brackets are indoor scenes, others are outdoors



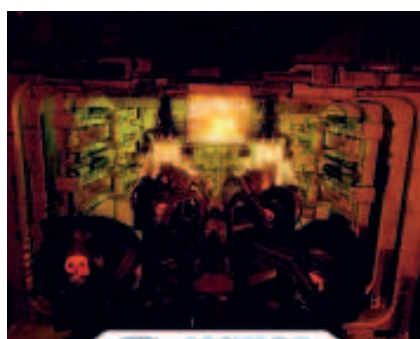
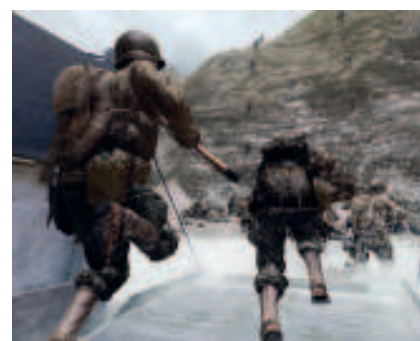
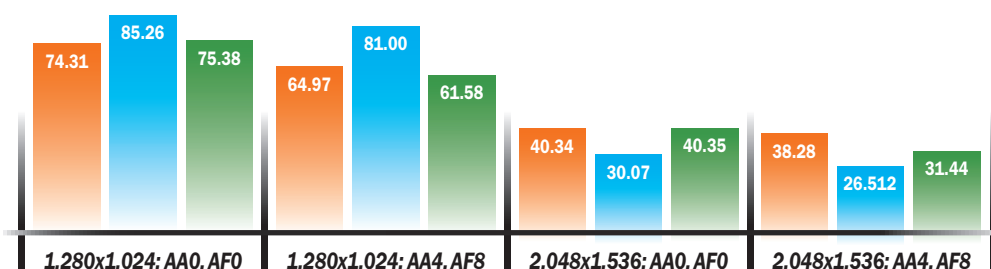
Half-Life 2: Lost Coast



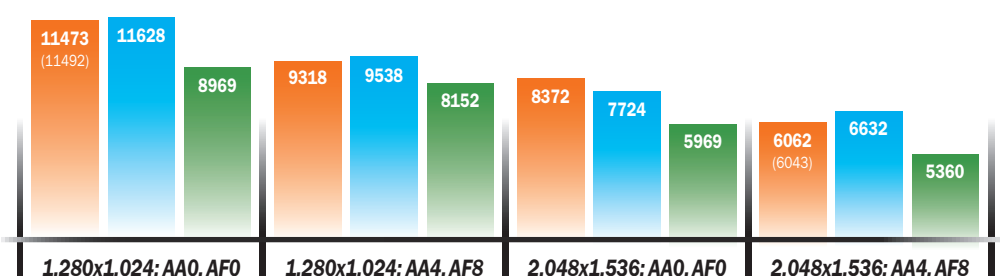
F.E.A.R.



Call Of Duty 2



3D Mark06



Everything left to play for

The DX10 war has just begun...

So we can unequivocally say that the G80 is by far the fastest DX9 card out there. It's somewhat intriguing to see from our performance graphs how the new architecture bottlenecks in different ways to existing cards, but ultimately, in every test we ran the game was playable, and that's the only thing that really counts.

The best news for NVIDIA is that at the higher resolutions and image qualities the G80 beat CrossFire almost every single time, scaling its performance to the high much more adroitly. Additionally, one score to look at carefully is the *Oblivion* one – the pure pixel indoor scenes are nowhere near as fast as on a CrossFire setup. Where the vertex limitations of outdoor scenes held previous cards back, though, the adaptive engine of the G80 really comes into its own. Importantly, the chip scales better than both cards, barely taking a performance hit for higher resolutions and image quality.

And this is in environments where the card is converting DirectX 9 vector instructions to scalar calculations on the fly – something NVIDIA suggested will eventually improve significantly with more work on the driver.

Finally, making the card the undisputed champion, image quality is excellent. Gone are the old days of texture shimmer, in comes HDR and anti-aliasing simultaneously, and 16x anti-aliasing on a single card. It's a hell of an

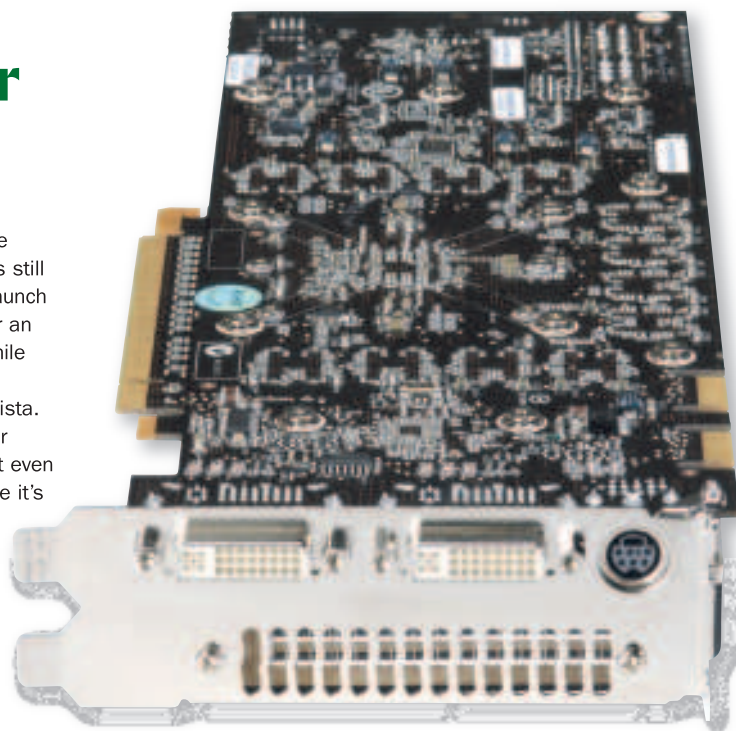
achievement to have kept this engineering feat quiet for so long.

If there's an Achilles heel to the card, though, it is that DirectX 10 is still an unknown quantity. As with the launch of ATI's 9700, it's a card waiting for an API to prove its real worth; meanwhile the red rival is refining R600 in preparation for the real launch of Vista. Right now, there's no DX10 driver or games to test it – in fact, you won't even get Aero enabled on a G80 because it's not recognised by the OS. How this card will perform in its native land is an unknown quantity – the R600 even more so.

Biting at the other ankle is that fact that this card is a monster – it's two slots wide and is longer than a motherboard is wide. You'll have to make sure there's room in your case before buying one. On the plus side, though, it is very, very quiet and power efficient – NVIDIA is recommending a mere 450W supply is used with one of these babies.

Which means that yes, we can absolutely recommend GeForce 8800GTX as the fastest, most cost effective graphics card for gamers available today. What we can't say, though, is that it's the best card for Vista and DX10 gaming – but no-one can make that claim yet.

93% PCF says... "A triumph of design and a child of secrecy, G80 is the new 3D benchmark."



General Purpose and Corporal Focus

Because there's more to life than graphics

One of the benefits of keeping more of the graphics pipeline on the GPU is increased power for instancing, where an object, say a bird or a brick or a leaf, is called from the CPU once and then redrawn many times with minor variations to create a unique look each time. This is a requirement for DX10, and should allow developers to create complex game worlds without troubling the CPU.

One side effect of having such a versatile ALU, however, is what NVIDIA is calling 'General Purpose GPU' – or GPGPU – functions. In other words, putting all that processing power to effect doing something else. You won't see it running an operating system (there's a challenge, Linux nuts) any day soon, but you will see more physics calculations, for example, being run on the G80 at the same time as the graphics operations. The impressive waterfall demo (pictured above) with its cascading stream of fluid is a gauntlet laid down for Ageia...



SPECS	SHADERS	CORE CLOCK (MHz)	MEMORY (MB)	MEMORY CLOCK (MHz)	MEMORY BANDWIDTH (BITS)
GEFORCE 8800GTX	128	575	768	900 (1800)	384
ATI X1950XTX (CROSSFIRE)	16 (48) x8	650	512x2	1000 (2000)	256
GEFORCE 7950GX2	48x16	500	512x2	600 (1200)	256



BARGAIN ALERT

PowerColor X1950 Pro

What's that? High-end graphics performance for £130?
You're kidding me, right?



Price £130 **Manufacturer** Sapphire **Web** www.sapphiretech.com

To which the answer is roundly and comprehensively, no. A little more than the best budget cards in price, and outperforming NVIDIA's 7900GT core, this card flies in the face of every convention going, and proves (if proof were needed) that competition in the graphics card market is now madder than a bra full of sparrows.

As the name implies, the X1950 Pro has its roots in the X1950XT. The GPU is very similar, only with a number of pixel-shader pipelines disabled, leaving it with 36 instead of the standard 48 to play with. But with ATI's still-rather-lovely system of three vertex units per shader, a genealogical trait for which we can thank last year's X1900XT, the 1950 Core still performs admirably, even in pared-down form. The core and memory are, of course, down on speed from the X1950XT, but at 580MHz on the core and 1,400MHz on the card's 256MB RAM, the components are, let's face it, hardly slouching.

And the cards buddy up for CrossFire action, with less hassle than you might expect. That said, it took us a while to actually get the things talking to each other, as you need to put the two

bridge-cables exactly the right way around – something that isn't mentioned in the manual, obviously. At least ATI has finally ditched that abortive external cabling system, and opted for an in-rig bridge system almost identical to SLI, only with two bridges instead of one.

CROSSFIRE CAPERS

And if the performance is good with one card, it's nothing short of stunning with two. A pair in CrossFire mode will outperform a single X1950XT by 2000 marks in 3DMark and offers comparative performance in F.E.A.R. at 1,600x1,200 (although the balance tips in the X1950's favour at 1,280x1,024 – as ever, a slight processor overhead in dual-card setups drags the score down a touch). Now bear in mind that a pair of these cards will set you back £260, while a single X1950XT is over £300. Next in the firing line is NVIDIA's 7900GT

"A pair in CrossFire mode will outperform a single X1950XT"

– a £200 card – which the X1950 roundly lambasts in every test.

Simply put, there's no competition. This is the most powerful sub-£150 card ever released, offering high to mid-range performance at a budget price, and blowing every other card up to the £200 mark out of the water. Plus, a pair of them will give you access to high-resolution performance, providing you have a CrossFire-compatible mainboard. In no uncertain terms, the X1950 Pro kicks some royal ass. **Al Bickham**

BENCH MARKS	RADEON X1950 PRO	RADEON X1950 PRO (CROSSFIRE)	GEFORCE 7950GT
3D MARK06 (1.280X1.024)	5,055	8,456	4,544
F.E.A.R. (1.280X960, X2, X4)	78 fps	95 fps	64 fps

Core	R580+
Memory	256MB GDDR3
Core speed	580MHz
Memory speed	1,400MHz
Shader pipelines	36
Form factor	PCI-Express
Dual card support	CrossFire
AV-out	2 x DVI, 1 x S-Video

90% PCF says... "Unbelievable performance makes this the finest mid-range card ever."



RAM RAIDER

Corsair Dominator PC2-8888 DDR2

Blistering speeds come as standard, but it's your wallet that'll be dominated...

Price: £420 Manufacturer: Corsair Website: www.corsairmemory.com

You have to pay through the filter for the highest-performing components – 'twas ever thus – but how far are you willing to go? Corsair's latest Dominator memory is designed for high-end, atom-splitting Conroe/FX-62 gaming rigs, and runs at an incredible 1,111MHz out of the box – the fastest retail memory you can buy.

Moreover, it's eminently overclockable, thanks to the heat exchangers. Their multi-layer construction goes right down to the basalt – well, the PCB at any rate – to conduct heat away in the most efficient manner possible. As a result, the Dominator's base latency at 1111MHz is 4-4-4-12, better than DDR2's usual CAS latency of five, and faster than the stock 1066MHz you'd expect with the highest of high-end memory.

All this means that the RAM works at full tilt, and remains entirely stable in its out-of-the-box overclocked state. Each module has three rows of aluminium heatsinks, with the increased surface area dissipating heat with greater efficiency. The pair of modules even comes packaged with dual 40mm clip-on fans – another impressive first for the Dominator.

Of course, if you're running a Conroe-based system already, chances are your motherboard only supports 800MHz DDR2, so the benefits of higher clock-speeds will be wasted on you. But for those

with a full 1,066MHz-compatible board, you'll be pleased to hear that the Dominator manages a 10% efficiency boost over 800MHz parts when running at 1,066MHz. Running *Doom 3*, *3DMark* and *SYSmark* on the same system also yielded performance increases, although less dramatic.

PAIN IN THE POCKET

The downside of the Dominator is the price tag; you can purchase a budget PC for less than these modules. The price difference between this RAM and 800MHz modules is significant, for a modest performance gain. That said, if money is no object and you're looking to create the ultimate performance rig, then the Dominator's the only game in town – along with a mobo that lets it run at full speed. If you aren't a beneficiary of the Rockefeller estate though, spending that price difference on a processor upgrade, powerful GPU or even a 10,000RPM hard drive will result in a brisker PC. **Orestis Bastounis**

Memory type DDR2
Frequency PC2-8888 (1,111MHz)
Capacity 2GB
Latency 4-4-4-12

Extra features Dual Heatpipe Exchange, 40mm fans

80% PCF says... "The best SDRAM available, but at a hideous price."

GET ONBOARD

Asus P5N32-SLI Premium

NVIDIA's solution to the lack of Sli support for the Core 2 Duo

Price: £170 Manufacturer: Asus Website: www.asus.com.tw



Thus far, Conroe mobos boasting SLI compatibility have been missing from the performance picture. It seems NVIDIA has been holding off on its NFORCE 5 and 6 chipsets until the release of the G80 GPU. Now the 8800GTS is all systems go, the floodgates appear to have opened.

One of the earliest SLI-for-Conroe boards, The P5N32-SLI from Asus, brings NVIDIA's flagship NFORCE 5 chipset to the land of Intel, and that means Core 2 Duo owners can finally use SLI for some of the best hi-res games performance possible. The NFORCE 590 chipset competes with Intel's own top-end 975x core logic on performance, and this particular iteration has better features than most Intel boards.

FEEL THE NFORCE

A long feature list gives you three PCI-Express slots, two for an SLI setup, with the third reserved possibly for an as-yet-unannounced NVIDIA physics processing card. The rear panel layout is interesting – ancient serial/parallel ports are out while dual gigabit ethernet and E-SATA connectors are in, which better reflects the needs of 21st century computing. Rear audio

output is also missing and instead provided via a separate 7.1 daughterboard, minimising the hiss and crackle of interference.

The two points where this motherboard falls down are its scope for overclocking and the lack of support for quad-core CPUs. There's the usual overclocking presets, but they garner worse results than a 975x-based mobo.

The Premium offers great performance, and one of the only choices for marrying SLI with Core 2 Duo – until the NFORCE 690 chipset hits. **Orestis Bastounis**

Socket Intel 775 Core 2 Duo

Chipset NFORCE 590

FSB 1,066/800MHz

Memory 4xDDR2 800/667/533 Mhz (8GB max)

Graphics Supports dual PCI-Express x16 in SLI

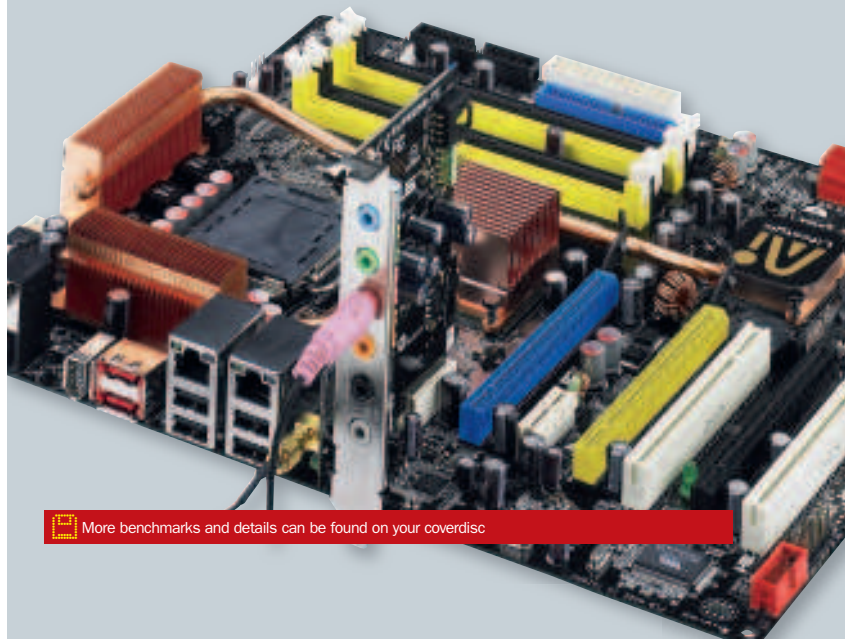
Expansion 2 x PCI-Express x16, 1 x PCI-Express x8, 1 x PCI-Express x1, 2 x PCI

Storage 6 x SATA, 1 x IDE, 2 x SATA External

Audio Asus Supreme FX 7.1 Audio

Ports 8x USB2.0, 1 x IEEE1394a, 2 x Gigabit Ethernet, 2 x PS/2, SP/DIF

84% PCF says... "One of the priciest mobos out there, but well worth it."



More benchmarks and details can be found on your coverdisc



SUPER CHIC

Evesham Mini PC Plus

The original was aimed at the style-conscious Mac Mini crowd, but does the Plus edition have the substance as well?

Price £799 **Manufacturer** Evesham **Web** www.evesham.com

Well, it's official: 'good things come in small packages' is no longer just something you say to people under the height of 5ft 8in when they're feeling glum. From the moment this teeny graphite box appeared in the office, it's had a queue of admirers that stretches out of the building, around the corner and into the Apple store down the road.

Anyone who takes the time to poke around inside will be all the more besotted. Behind the radar-deflecting outer-shell is a potent Core 2 Duo chip, lifting this beyond its predecessor's status as a sideways kick at the Mac Mini. You may feel we're constantly harping on about how Core 2 Duo will solve all the world's ills, but the fact remains that it pretty much immolates the competition. In a media centre PC, the difference is all the more apparent. PCMark's video encoding benchmark spat out a score of 358.177KB/s, and if you compare that to our roundup of £1,500 PCs in PCF188, the Mini PC Plus, packing the 2GHz chip, puts every one to shame in the encoding stakes.

While the Core 2 Duo is the star of the show, the supporting cast certainly

pulls its weight. A gigabyte of RAM is more than welcome (although given Conroe's 1,066MHz bus capabilities, something a bit faster than 533MHz would have been nice), and the 100GB SATA drive ensures there's plenty of breathing space for your media. Particularly impressive is the inclusion of a hybrid TV tuner, which ensures that even if you're suffering from the continuing farce that is the digital switchover, you're guaranteed not to miss the televisual events of 2007.

MINI TROOPER

Quite how Evesham rammed it all into the already bulging case without snapping the laws of physics is another thing entirely. It seems churlish to criticise something that's such a shining

"Particularly impressive is the inclusion of a hybrid TV tuner"

validation of the media centre concept, but there are a couple of minor issues with the Mini PC Plus. A lack of front USB ports means extra fiddling,

particularly if you have it squirreled away inside some chic living room furniture. Also, don't expect the internal graphics to handle anything that smells like a recent game. Otherwise, though, this is a diminutive but extremely potent machine. **Mike Channell**

BENCHMARKS	
PCMARK SCORE	3281
FILE ENCRYPTION	22.590MB/S
IMAGE DECOMPRESSION	28.202MP/S
VIDEO ENCODING	358.177KB/S
MEMORY LATENCY	7.591 MILLION ACCESS/S
More benchmarks and details can be found on your DVD	

CPU	Core 2 Duo 2GHz
RAM	1GB DDR2 533
Storage	100GB
Optical	DL DVD-RW
Graphics	Intel Extreme2 integrated
Audio	Realtek HD Audio
IO	2x USB, 1x Firewire
Networking	10/100 LAN
Dimensions	16.5x16.5x5cm
Extras	Media Center remote

91% **PCF says...** "The Evesham Mini is a proud and stylish addition to any living room."

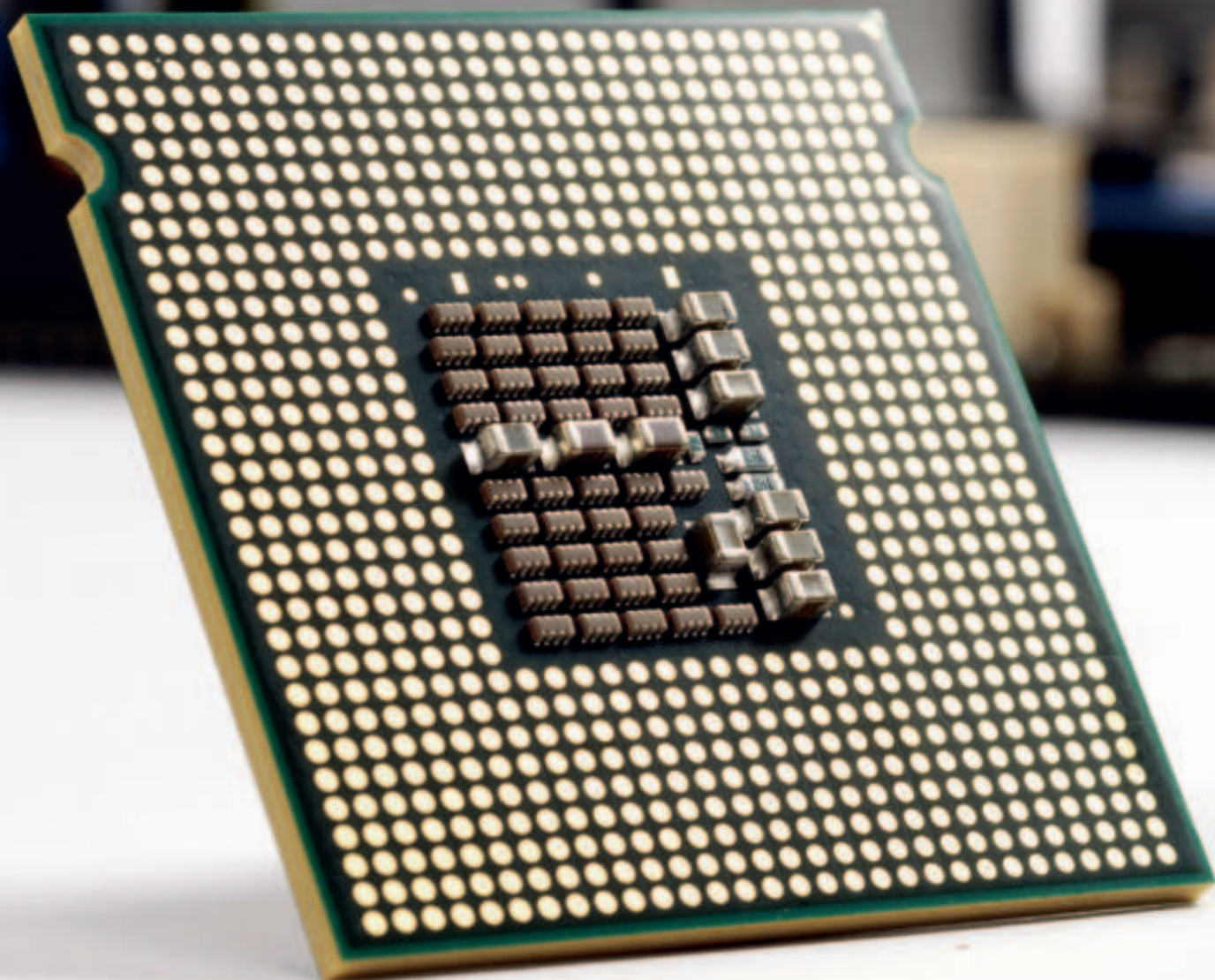
THE POWER OF FOUR

Intel Core 2 Extreme QX6700

With Core 2 Duo, Intel stole the performance crown from AMD. Now it plans to take the PC to another level with the world's first quad-core chip.

Jeremy Laird bows down before King Kentsfield...

From £700 (estimated) Available Now Web www.intel.com



"Kentsfield is another milestone in Intel's recovery from the dark days of the Pentium 4 Netburst"

Give it up for Kentsfield, the first ever quad-core CPU for the desktop PC – four processing cores, a quartet of software threads and a whole mountain of processing power. It's incredible to think that less than two years ago you had a choice between a piping hot 3.8GHz Intel Pentium 4 single-core chip or AMD's lower clocking, yet somewhat superior, Athlon 64 running at around 2.4GHz. Today, Intel's new quad-core killer packs four cores,

each boasting significantly more number-crunching grunt than those run-out single-core processors. Even by the usual, borderline-barmy rate of PC technology development, that's an insane increase in available computing power in a little more than 18 months.

Kentsfield – known officially as Core 2 Extreme QX6700 – is another milestone in Intel's remarkable recovery from the dark days of the Pentium 4 Netburst chip. Intel began by pipping AMD to the dual-core post with Pentium D just over 18 months ago. It was stuffed by the Athlon 64 X2 in terms

Competing with quad-core

All aboard AMD's 4x4 train...

The Athlon 64's honeymoon period is over. From its launch in 2003, until Intel wheeled out Conroe this summer, AMD's elegantly architected Hammer core had it all sown up. Now, with Intel's recent return to form, AMD is under serious pressure and the arrival of the quad-core Kentsfield just makes matters worse. Is it game over for AMD?

In terms of single-processor products, AMD won't catch up until at least the arrival of its quad-core chip – codenamed K8L – which is due out no sooner than mid-2007. Full technical details of K8L haven't been released, but in many ways it resembles Conroe. The SSE throughput has been doubled to 128-bit and instructions per clock are up. AMD has also improved fine control of the die, enabling the frequency of each core and the memory controller to be tweaked separately. If K8L was here today, it would no doubt give Kentsfield a run for its money. But with Intel tooling up to produce chips on its latest, ridiculously tiny 45nm production process in 2007, who knows what devilry K8L will have to cope with when it does come to town.

In the meantime, AMD is prepping a dual-socket desktop platform known as 4x4. It may even have appeared by the time you read these words and will enable AMD to offer a competing four-core solution before its native quad-core chips turn up. It's a move that smells of desperation in the face of Intel's relentless onslaught, but don't count 4x4 out. Thanks to the Athlon 64's higher level of feature integration and far superior CPU I/O, the dual-socket configuration might just close the gap with Kentsfield. Even more tantalising is the prospect of an eight-core AMD offering – a pair of K8Ls on the 4x4 platform is surely a scary thought for Intel.

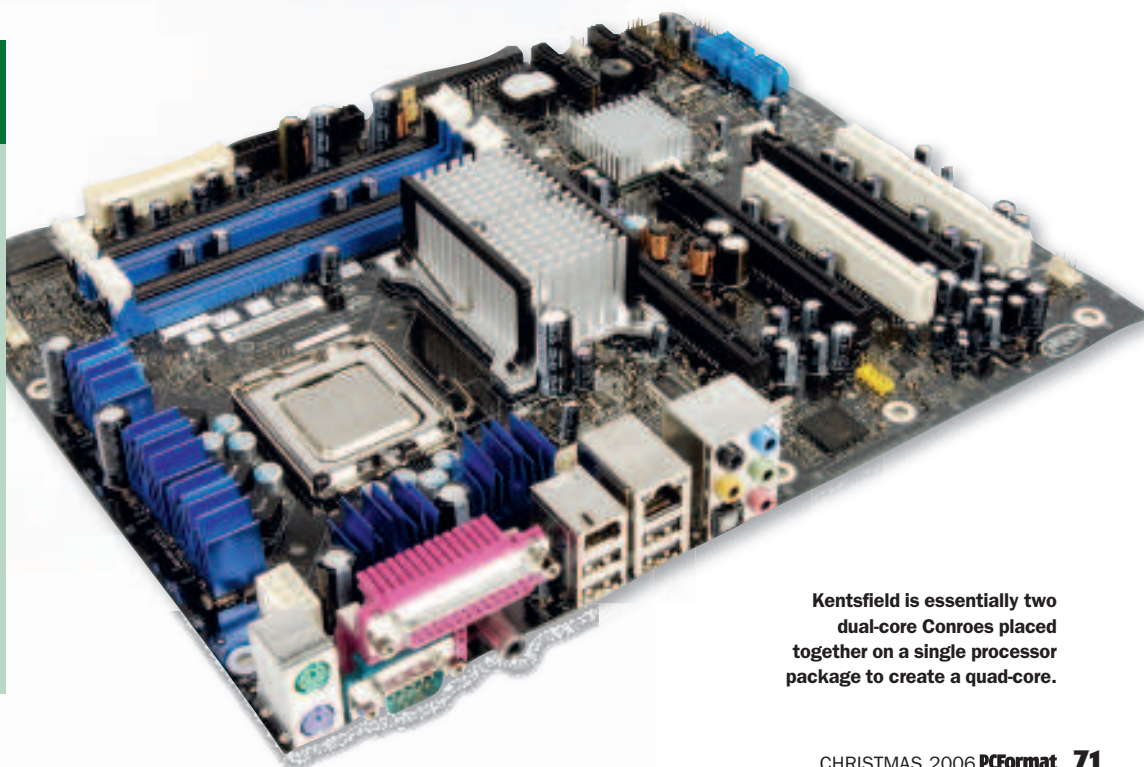
HOW WE TESTED

Quad-core conundrum

A big thanks to good old Intel. By adding another pair of processing cores to make a grand total of four, Chipzilla has just made our lives much more complicated. The problem is that different applications offer extremely variable levels of software threading. Performance scaling on multi-core CPUs as a result of this can be extremely hit and miss.

With that in mind, we tested Kentsfield in a range of single-, dual- and multi-threaded applications to give an accurate picture of overall performance. Just for the record, *Far Cry* represents a very demanding but

single-threaded game test, while *Quake IV*, *Windows Media Encoder* and one of our own 3DS Max tests are dual-threaded. The true multi-threaded benchmarks include H.264 video decoding, *Photoshop CS* and another 3DS Max workload. We also performed a multi-tasking test to demonstrate the benefits of quad-core while application juggling. All the tests were performed with a fresh installation of Windows XP SP2 and both the Intel and AMD platforms were supported with 1GB of 800MHz low latency Corsair DDR2 memory.



Kentsfield is essentially two dual-core Conroes placed together on a single processor package to create a quad-core.

of performance and thermals, but it was priced to sell and delivered thoroughly adequate multi-threaded performance for the money. Intel's real renaissance, however, kicked off less than six months ago with the launch of Core 2 Duo. Codenamed Conroe, it became apparent that Core 2 was a stunning piece of work by the Santa Clara silicon sorcerers. Not only did it beat the Athlon 64 for pure processing prowess, it also combined that with parsimonious power consumption and massively reduced heat dissipation compared to the company's outgoing Netburst chips.

PART OF THE PROCESSOR

It's somewhat surprising, therefore, to find Intel wheeling out the quad-core Kentsfield several months earlier than its originally announced Q1 2007 slot. Intel's engineers must be earning their money these days, but more significantly, it's a function of the company's mastering of AMD in process technology. Kentsfield is only possible because Intel has a mature 65nm production process in the bag, while AMD struggles with its comparatively coarse 90nm node. A finer process means smaller, cheaper chips, enabling Intel to flog a quad-core processor at a price that punters can afford. Even better than this, the fact that Intel has been shipping retail 65nm chips for more than a year should make it easier to squeeze a quad-core chip into vaguely sensible thermal and power consumption envelopes.

It's also worth noting that the appearance of a quad-core chip raises questions regarding the readiness of the overall software environment. After all, not all existing PC applications, and precious few games, can make efficient use of a dual-core processor, much less a chip with a quartet of cores.

If that's the background theory to Kentsfield's launch, what's Intel's latest über-chip like in the silicon? For now, only one model is available, sold under Intel's Core 2 Extreme branding, clocking in at 2.66GHz – slightly down from the 2.93GHz of the quickest current Conroe – and yours for the think end of £700.



BENCHMARKS	INTEL CORE 2 EXTREME QX6700	INTEL CORE 2 EXTREME X6800	AMD ATHLON FX-62
SINGLE-THREAD TEST			
Far Cry (640X480, fps)	127	139	101
DUAL-THREADED TESTS			
Quake IV (640X480, fps)	157	176	136
WMV9 video encode (min:sec)	01:29	01:39	01:58
3DS Max underwater animation test	18 secs	17 secs	21 secs
MULTI-THREADED TESTS			
HD H.264 video decode (CPU utilisation)	10%	18%	26%
Photoshop CS	16.9 secs	24.9 secs	29.5 secs
3DS Max radiosity test	23 secs	30 secs	43 secs
Multi-task test (WMV9 encode & H.264 decode, min:sec)	01:32	01:51	02:28
MEMORY BANDWIDTH	5,617MB/s	5,602MB/s	7,698MB/s
CORE TEMPERATURE UNDER MAXIMUM LOAD (Degrees Centigrade)	63°	49°	N/A

The new chip generates massive increases in available computing power.



Early next year, more affordable variants will be launched under the Core 2 Quad monicker running at clockspeeds of 2.4GHz and lower.

Kentsfield's basic architecture is something of a no-brainer. It's a pair of dual-core Conroe dies crammed on to the same processor package. Known as a multi-chip package, or MCP for short, this dual-die configuration has been seen before on the Presler 65nm dual-core

"The appearance of quad-core raises questions regarding the readiness of the software environment"

Pentium D. According to Intel, the MCP approach improves yields by reducing the number of dud CPU dies, which then translates into cheaper chips. Without doubt, that's true, but it's not the whole story. Just as Presler was succeeded by a more efficient single-die design, it's safe to assume Intel is working on a native quad-core chip, based on the company's 45nm production process.

MCP is, however, accompanied by a technological drawback. PCF readers will remember that Conroe's northbridge-based front side bus and memory controller is the chip's only significant weakness. By fusing Conroe's L2 cache memory into a single shared pool, Intel was able to cut down on core-to-core communications over the CPU bus and free up I/O bandwidth for keeping the cores fed with data.

With two entirely separate CPU dies on Kentsfield's processor package, however, cache coherency traffic is back on the menu and bus bandwidth is again going to be the sticking point for Intel. That's less than ideal for an ultra data-hungry quad-core design and might just hand the four-core desktop performance advantage to AMD's 4x4 platform.

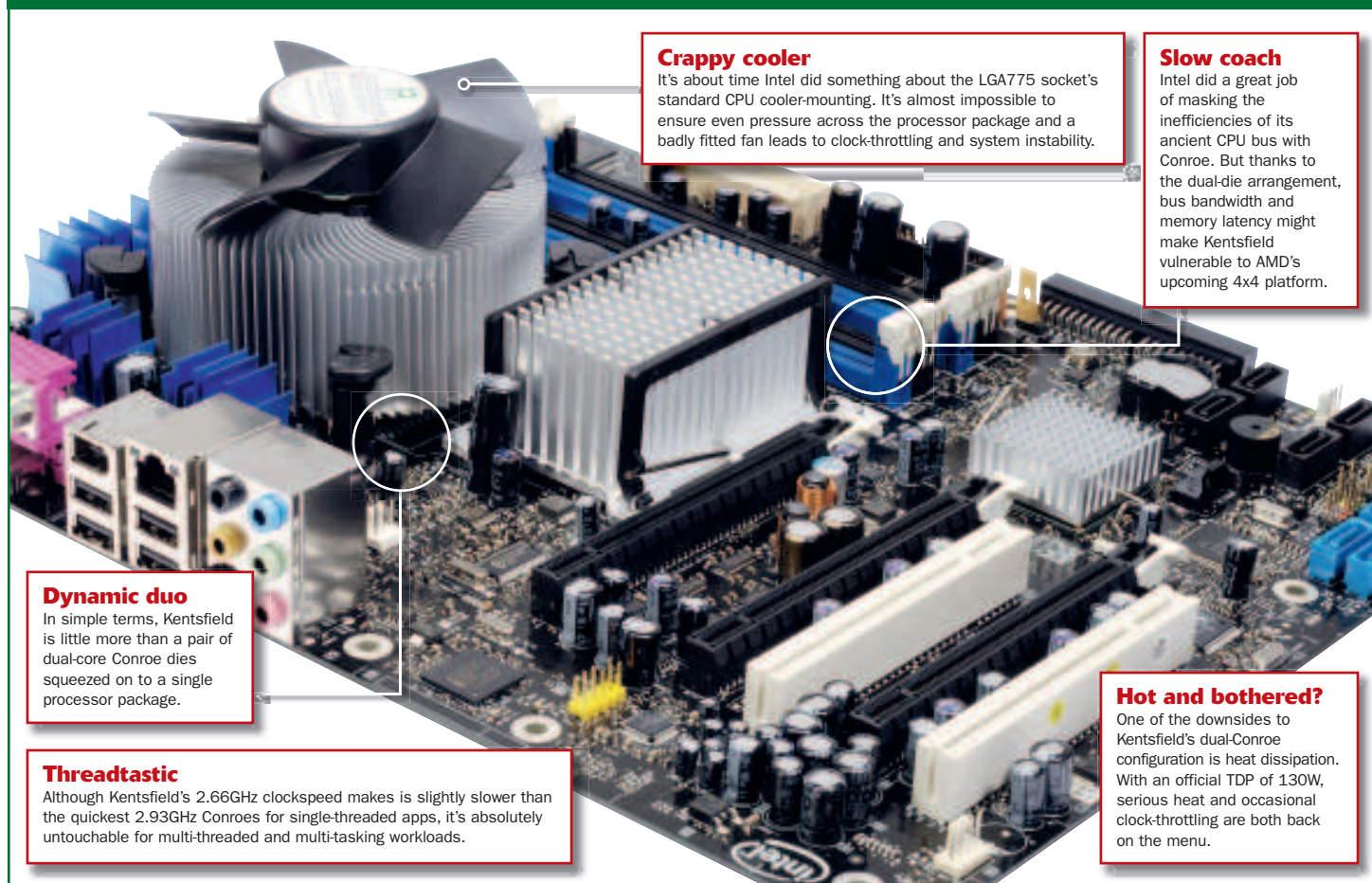
The presence of a pair of Conroe dies isn't exactly bad news, and Kentsfield's detailed specification is a dead ringer for any Core 2 Duo you care to mention. We've covered Intel's so-called Next Generation Micro Architecture (NGMA) before, but the headline news is a change in focus away from the crazy clockspeeds of the Pentium 4, in favour of improved instructions per cycle. To pull this off, Intel widened Conroe's execution core from three to four issues and doubled SSE data handling from 64- to 128-bit. The idea behind this is more poke and less gas guzzling, and that's exactly what NGMA delivers.

HARD CACHE

Other features shared with Conroe include the 1,066MHz CPU bus frequency, support for 800MHz DDR2 memory and 4MB of L2 cache memory per CPU. That's a total of 8MB cache, a new record for a desktop chip. Finally, on the specs and features front, Kentsfield is theoretically compatible with any LGA775 socket motherboard chipset that supports Conroe. In practice, however, your mileage will vary depending on both the electrical spec of any board as well as BIOS updates.

All of which leaves us with the minor matter of Kentsfield's performance. The

KING KENTSFIELD The low down on quad-core



Crappy cooler

It's about time Intel did something about the LGA775 socket's standard CPU cooler-mounting. It's almost impossible to ensure even pressure across the processor package and a badly fitted fan leads to clock-throttling and system instability.

Slow coach

Intel did a great job of masking the inefficiencies of its ancient CPU bus with Conroe. But thanks to the dual-die arrangement, bus bandwidth and memory latency might make Kentsfield vulnerable to AMD's upcoming 4x4 platform.

Dynamic duo

In simple terms, Kentsfield is little more than a pair of dual-core Conroe dies squeezed on to a single processor package.

Threadtastic

Although Kentsfield's 2.66GHz clockspeed makes it slightly slower than the quickest 2.93GHz Conroes for single-threaded apps, it's absolutely untouchable for multi-threaded and multi-tasking workloads.

Hot and bothered?

One of the downsides to Kentsfield's dual-Conroe configuration is heat dissipation. With an official TDP of 130W, serious heat and occasional clock-throttling are both back on the menu.

short story is that when Kentsfield is good, it's oh so very good. A nice example is H.264 video decoding. Wind back the clock 18 months or so and there wasn't desktop chip in Christendom capable of smoothly decoding a high bitrate 1080p video file encoded in H.264. Today's quad-core shrugs off such content with a thumb-twiddling 10% of its compute capacity. Its ability to decode four such video streams without dropping the frame is just showing off, but it's multi-tasking that really demonstrates what this chip is capable of. Try simultaneously running a demanding 3D game, decoding HD video and transcoding media files on any other processor and the result is a headache-inducing jerkorama. On Kentsfield, it's not a problem.

Less magnificent is Kentsfield's single app performance. Part of the problem is that many multi-threaded apps, such as *Quake IV*, are only capable of generating two really CPU-intensive threads, leaving one pair of Kentsfield's cores largely idle. Add in a 266MHz clockspeed deficit compared with the quickest Conroe and you've got a recipe for the odd benchmark defeat. The same

goes for single-thread applications, including nearly every current game. Even with workstation-class software designed for multi-socket systems, such as *Photoshop* and *3DS Max*, Kentsfield delivers mixed results. Some tasks fly, while others are limited.

NOISE POLLUTION

While we're criticising the world's first quad-core chip, we noticed that Intel has locked the CPU fan-speed of our sample platform to its deafening maximum speed. Intel claims this is a result of a lack of fan-speed control on the pre-production mobo. But it has no problem controlling fan speeds with a Core 2 Duo installed. Using the standard Intel cooler, Kentsfield is prone to the occasional heat-induced clock-throttling episode. Encased beneath a quality Zalman copper cooler, however, no such issues arose. Our attempts to overclock the chip were less successful, with clock-throttling making for inconsistent results above the stock 2.66GHz core frequency.

Of course, with a power rating of 130W – right up there with the worst of the Pentium 4 chips and over 50% higher than any previous Core 2 chip



Intel's quad-core chip is untouchable for multi-threaded and multi-tasking.



configuration – that's not surprising. Compared with the astonishing headroom of a regular Core 2, Kentsfield is a chip right on the ragged edge of technology. As a clocked-up enthusiast chip, that's partly forgivable, but despite the multi-threaded poke, the suspicion remains that in its enthusiasm to maximise its advantage over AMD, Intel may have jumped the gun. **PCF**

Configuration	Dual-die, quad-core
Clockspeeds	2.66GHz
Process technology	65nm
Instruction pipeline stages	14
Cache memory	8MB (2x 4MB)
Front side bus frequency	1,066MHz
Memory support	Up to DDR2 800MHz
Data modes	32- and 64-bit
TDP	130W
Other	'VT' virtualisation technology
Socket	LGA 775
Chipset support	Intel 965, 975, NVIDIA NForce 5 and ATI RD600. Possible support for Intel 945 and NVIDIA NForce 4
85%	PCF says... "Massive multi-thread poke, but is 65nm a node to soon for quad-core?"

ROUND-UP

IRRESISTIBLE RIGS

Ultimate games performance can be yours for £2000. **Alex Cox** investigates uber-PC packages from four of the UK's leading rig-builders...

So, we're all eagerly awaiting the arrival of the G80. Our preliminary results suggest NVIDIA's monster new card will wipe the floor with every card that has ever been.

The same can be said of Kentsfield, which absolutely hammered a large number of the benchmarks we threw at it. But that doesn't necessarily mean the current generation of graphics cards and CPUs should be put to

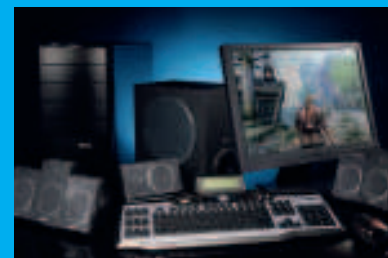
pasture. The X1950 is barely out of nappies; it's only been out a couple of months, and we reckon driver revisions will milk more out of this card sooner rather than later. Kentsfield's arrival, heralded by angels in Intel bunny suits playing diamond-encrusted trumpets, might not mean that much for gamers yet; its primary strength is video editing, and that's likely to continue until such time as programmers (or perhaps DirectX 10) start making good use of the individual cores.

We're also in the sort of situation where prices are going to drop rather quickly. The rigs we've chosen for this test all stand proud at the two grand mark, and in a few months, we reckon you'll get the same kit for a good £400 – £500 less. Not just because of the inevitable drop in the price of the Core 2 and top-line graphics GPUs, either. Overproduction of flat panels in the Far East means big ol' monitors are likely to become far more affordable. And we all know the direction RAM prices have been going, and will probably continue going.

But is this a good thing for consumers in the long run? Doesn't it mean you should

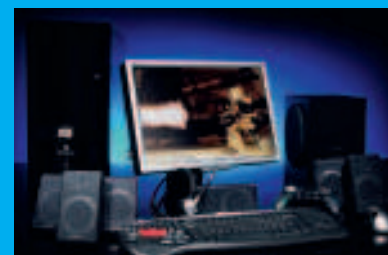
always plump for a good-enough £1,500 rig and never suffer the pangs of expensive system depreciation, especially in the face of forthcoming wallet-busting upgrades? Well... no. If you want the best right now, you might as well get it now, and constantly plummeting prices have made sure you might even be able to afford it. A PC gamer worried about things becoming obsolete quickly is like an entomophobic beekeeper. Just give up and choose something else to do with your time, because you're inevitably going to come across that thing you fear the most.

Finally, we should note the price. It's likely that you'll be able to build a machine of your own, similarly specced and of course more customised, for less than you'd get one of these packages. But there's more to the price than just the components – you get a rig built for you (and that can be a lot of hassle, especially setting up CrossFire), plus you generally get at least a year of after-sales care, and you get the benefit of a bunch of engineers actively seeking the fastest combination of components they can find. It's worth it.



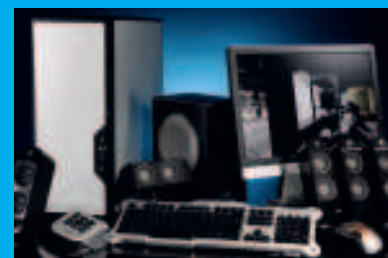
MESH Elite Quad SLI

Kitted up to the back teeth, with a pair of 7950 GX2s for absurd graphical grunt, an X-Fi for awesome 3D sound, the best gaming accessories you can buy, and huge storage.



Scan Isotope

A speedy Core 2 duo combined with 7950 GX2s in SLI, housed in a wonderful case with a splendid – if not massive – monitor. What more needs to be said?



Wired2Fire Hellspawn Xfire

PCF's favourite case gets put to work looking after a pair of X1950s in CrossFire mode, while a nifty screen does their bidding. Top gaming peripherals, too.



PC Nextday Zoostorm 5-8401

You've probably got the message by now. Speedy Core 2 Duo, shiny gaming peripherals, huge monitor and two X1950s spewing out a ridiculous amount of power.

HOW WE TESTED

Benchmarks ahoy!

Testing a PC system is never a particularly easy task, let alone pitting four of the things against each other. The natural first step is to settle on a few appropriate benchmarks, and since we were testing these full rigs head to head, we decided to use tests which specifically related to the power of the cards inside driving the full resolution of the panel attached. We averaged out a few runs of 3DMark06 in native resolution, combined frame rate analyser Fraps with some girly running around in a particularly complex area of Oblivion, and watched these killer rigs tear through the Source engine with our standard pre-recorded demo of Half-Life: Episode One, all with HDR switched on and detail up to max. We also cunningly switched resolution a few times, which proved to be the undoing of one panel in particular, and tested the keyboard and mouse included with each rig.



↑ MESH Elite Quad SLI

Manufacturer Mesh Web www.meshcomputers.com

£1,999

We must commend the Elite Quad SLI on its looks. It's nice to have your components snuggled inside a thick aluminum box, especially when they're this fast. This is the only rig on test with a 2.66GHz Core 2 Duo, and a comparison of its stats with the otherwise similar Scan machine suggests that boost is worth the additional cash – an extra 5fps in Oblivion and over 500 3DMarks more performance should be jump enough. The larger monitor is also a bonus. The Iiyama is a credible screen with vivid colours, and at 22" it's just about the

perfect size for gaming. Once you step up to 24", components can feel the pinch.

There's not much you can fault about the Elite Quad SLI. Even the keyboard and mouse are great; Logitech's G15 has an LCD panel, and Creative's Fatal1ty mouse is a joy to hold. If anything, the real choice you'd be making is whether to plump for NVIDIA or ATI, and NVIDIA's effort lags a little. If you're concerned about the benchmarks, look elsewhere, but if it's the overall package that matters, we can't think of much better.

89% PCF says... "A fantastic package in most important respects, but CrossFire is a few steps ahead for hi-res joy."

↓ PCNextday Zoostorm 5-8401 £1,999

Manufacturer PCNextday Web www.pcnextday.co.uk

On paper, PC Nextday's Zoostorm rig is the pokiest stick in the box. A pair of X1950s in CrossFire, a 2.4 GHz Conroe CPU, 2GB of Super Talent DDR2 800MHz RAM and a 24" monitor to complement the setup: how can it be wrong?

Well, it's not. That's the short answer. The slightly longer one is that this rig kicks out some fairly startling framerates. With the highest native resolution on test – 1920 x 1200 – that Acer widescreen panel displays games in gloriously high definition, and crucially, the components selected

for this rig keep pace. It's what CrossFire does best, and the 2.4GHz Conroe, with its 4MB L2 cache, hits the price sweet spot.

The 24" Acer, certainly looks like something of a deal: the colours are deep and it's plenty bright, with the highest maximum resolution of any of the machines on test. It has its idiosyncrasies though – in particular, the need for you to hit the Auto Setup button when firing up certain games, as the screen doesn't quite keep up with the resolution switching. Still, it looks awesome.

92% PCF says... "Spanky parts, huge resolution, awesome performance. All boxes ticked with a railgun."





↑ Wired2Fire HellspawnXfire £1,999

Manufacturer Wired2Fire Web www.wired2fire.co.uk

We do have a bit of a thing for machines with their power supplies at the base – with the help of the tremendous Antec P180 chassis, this machine pulls it off perfectly, allowing for some clever and efficient fan placement. It's got a lot to drag the O2 over, too. There's a pair of shiny 1GB 6400 modules from OCZ plugged into an excellent Asus P5W DH Deluxe, and the undisputed king of the benchmarks in this test: X1950s running in CrossFire. Lording over the competition with a few thousand extra 3DMarks and around 135fps

in *HL2: Episode 1*, Wired2Fire's take on the CrossFire configuration is currently almost unbeatable.

Even though the monitor isn't the largest on test, it's 22" girth is sharp and detailed, with decent response times, with a splendid looking frame to boot. Much like the shiny case, it's not something you're going to want to hide away.

Play a few high-end games on this rig, however, and aesthetics will pale into insignificance. It's the sheer processing power lurking within that's important here, and this rig's got oodles.

↓ Scan Isotope £1,999

Manufacturer Scan Web www.scan.co.uk

The Scan entry doesn't have it easy. It's got the smallest screen on test and a poorer setup than the full-tilt MESH, and with competition so tight, this could make all the difference. Thankfully, there's a lot on board that tips the balance back in its favour. That monitor has a brilliant panel – we're starting to feel that we might not have given NEC the credit it deserves for its screens, and 1,680x1,050 is where Quad SLI really performs. It's so lucious we're prepared to say it's one of our faves on test. Scan also gets a step-up on MESH by

installing XP Media Center, instead of the slightly-crippled XP Home.

There's a 2.4GHz Conroe, Quad-SLI in the cards department, an X-Fi for 3D audio, and an set of Creative 5.1 speakers to blast out those gunshots. It's not a bad keyboard, and the FPS-centric extra keys are nice and all, but it certainly won't be everyone's cup of tea. The package as a whole is a great set – it even includes a classic Competition pro joystick – and holds it own marvelously in the benchmarks stakes with the rest of the rigs on test.

91% PCF says... "A high-perfect combination of dynamite looks and processing ability. Find a country where marrying it is legal, then move there."

90% PCF says... "Who needs a huge panel anyway? This one's small, but the rest of the rig more than makes up for that."



We're well aware that £2,000 hasn't suddenly become an insignificant amount of money. Investing in a full rig isn't an easy choice. But even if you're not in the market for another flat panel, a new CPU or even a new keyboard, you can glean the same thing we have from this test: Radeon X1950s in CrossFire mode is huge hulking ninja of a setup that pips a pair of 7950GX2s when it comes to high resolution framerates.

In terms of packages, everything available in this price bracket at the moment does seem to be eerily similar. Your cash is going into a heavyweight monitor, a top-of-the-line graphics solution, and high-spec (if not the absolute fastest) components. Maybe there'll be a few extras too – each of the machines comes with a decent set of gaming speakers, and the Scan system even included a classic 2-button Competition Pro digital joystick, much to our delight. We shed a tear for the 8-bit days after seeing that one.

Diving in at this level (as opposed to spending £500 more,

and aiming for the truly high-end stuff) does mean you'll have to make a few tiny compromises here and there – only the MESH machine manages a 2.66GHz Core 2 Duo processor, for example – and you will, of course, render anything you already own next to useless.

There's no real loser in this test; all these rigs offer consistently superb performance with today's technology, and there's grunt in each of them that we could only have imagined just a few years ago. Thankfully, there's also enough oomph in these boxes to put off the dreaded upgrade for some time. In the final analysis, though, top honours simply have to go to the PCNextday Zoostorm 5-8401, which combines a good 24" panel with the only pair of cards (short of NVIDIA's imminent G80) we'd choose for the job: Radeon X1950s in CrossFire configuration.

While all these rigs are awesome, the Zoostorm does it all at the eye-busting widescreen resolution of 1,920x1,200, which is hard to ignore.

Windows XP? Pah!

How well will these rigs cope with Vista?





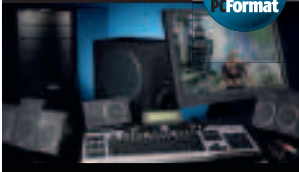

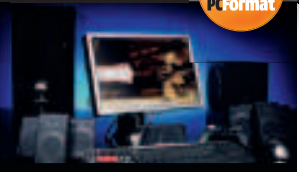

So, DirectX 10, then. A lot of fuss about nothing? Right now, yes. Big Vista-ready titles, such as Remedy's upcoming Alan Wake, will feature DirectX 10 effects for sure, and that'll be a nice thing for those with DX10 cards. But the crucial point is that DirectX 9 and Windows XP are still going to be around for years to come. There's a historical precedent for continued support of 'legacy' operating systems – many businesses still use Windows 2000, and the same is likely to happen with Windows XP. So don't rule it out yet – while Vista promises to be

pretty cool, games will still be XP-compatible for a long time to come.

The fact is, developers and publishers can't afford not to make XP-friendly software, at least until Vista sees a serious uptake in the marketplace. All of which means that G80, the first DX10 compatible card (though we've yet to see it physically running DX10 apps), isn't something you need to rush out and buy right now. The rigs here offer power comparable to a G80-based rig, and will serve you easily as well in the short term.

BENCH MARKS	MESH ELITE QUAD SLI	PC NEXTDAY ZOOSTORM 5-8401	SCAN ISOTOPE	WIRED2FIRE HELLSPAWN XFIRE
RESOLUTION	1,680X1050	1,920X1,200	1,680X1,050	1,680X1,050
3DMARK 06	7699	DNF (EST 9300)	7132	9276
OBLIVION	40.7	DNF	37.5	42.9
HALF LIFE 2: EPISODE 1	111	DNF	116	135

"All of these gaming rigs offer consistently superb performance with today's technology"

	£1,999 Mesh Elite Quad SLI	£1,999 PC Nextday Zoostorm 5-8401	£1,999 Scan Isotope	£1,999 Wired2Fire Hellspawn Xfire
	89% 	92% 	90% 	91% 
				
CPU	Core 2 Duo E6700 2.66GHz	Core 2 Duo E6600 2.4GHz	Core 2 Duo E6600 2.4GHz	Core 2 Duo E6500 2.4GHz
MEMORY	2GB DDR2	2GB DDR2	2GB DDR2	2GB DDR2
GRAPHICS CARD	2 x 1GB GeForce 7950 GX2	2 x 512MB X1950XT	2 x 1GB GeForce 7950GX2	2 x 512MB X1950XT
HARD DRIVE	2 x 300GB SATA	300GB SATA, 74GB 10,000rpm SATA	400GB SATA	300GB SATA
MOTHERBOARD	Asus PSN32SL	Abit AW9D	Asus P5B Deluxe	Asus P5W DH Deluxe
PSU	550W	500W Silent	–	–
CHASSIS	Mesh Black Aluminium Tower	Coolermaster Cavalier 3 Silver	Silver Store TJ0SB	Antec P180
SPEAKERS	Creative Inspire T7900 7.1	Philips MMS460 5.1	Creative 5.1	Logitech X-530 5.1
KEYBOARD	Logitech G15	Hiper Alloy	Zboard	Saitek backlit gaming keyboard
MOUSE	Fatal1ty 1010	Microsoft Laser 6000	Logitech G7 Cordless	Logitech G5 Laser
MONITOR	22" Iiyama E2200WS Widescreen	24" Acer AL2416WS	20" NEC Multisync 20WGX	20.1" Belinea 10/20/35W
MAX RESOLUTION	1,680x1,050	1,920x1,200	1,680x1,050	1,680x1,050

Pocket money pages

**SUB-£100
GOODIES
FOR THE
BARGAIN
HUNTER**



USB Cell Batteries

Recharge your batteries from your USB port

Price £13 for two **Manufacturer** Moixa **Web** www.moixa.com



We rarely see innovation in the pocket money pages. More often than not it's just tat or rehashed technology made from cheaper components. Not so with Moixa – it's created batteries that recharge from a standard USB port. Simply pop up the top third of the battery and it reveals a full-size connector that's ripe for plugging into PCs, laptops and just about anything else with a USB port.

The increased convenience does come at a cost of around a 40% drop in capacity, because of the space taken up by the connector and flashing lights. Thanks to the cylindrical shape, those with horizontally stacked, vertical USB ports (or vertically stacked horizontal port) on the front of their systems may find that they can only fit one battery in at a time.

Still, we like the idea. We've become accustomed to the ease of recharging iPods and the like via USB and, considering the amount of chargers we haul around, if this becomes the standard, we'll be happy.

88% **PCF says...** "A neat idea. We expect a pack in our Christmas stocking."



Hipper 50

Price £40 **Manufacturer** Mobinote
Web www.mobinote.net

Honestly, we do get some overpriced nonsense at Christmas time. This giant mood creator is essentially a big glowing egg with a raspy speaker underneath. Mercifully, you can feed your standard speakers via the line out and spare your music from bastardisation. Once up and running, the colour of the lighting softly pulsates in a fairly soothing fashion, calming the techno-rage we experience in an average day at PCF. Whack some thundering dance music on, though, and it happily throbs in time with your tunes. This is a reasonably charming party piece, but £40 strikes us a bit steep for a large flashing egg.

64% **PCF says...** "So costly we were looking for an 'i' on the box."



Qoolqee XPlayer

Price £60 **Manufacturer** Qoolqee
Web www.qoolqeeuk.com

This is it. The new trend in MP3 player design is clips. The new iPod Shuffle can be attached to a belt, collar or earlobe with ease, and Qoolqee is damned if it's not going to offer the same wearability solutions (or however companies describe this sort of thing). The Qoolqee is very much a standard 1GB MP3 player, housed in a terrifyingly Eighties rubber-buttoned case. Designed to be hard-wearing, this looks less awful in any colour other than red. On the plus side, this is a reasonably durable device and the radio is a handy addition. Our main worry is the infinitely cooler new 1GB iPod Shuffle, which is the same price.

79% **PCF says...** "Do you want an FM radio or street cred?"



Flash Voyager 8GB

Price £115 **Manufacturer** Corsair
Web www.corsair.com

Yes, put down your pen, Angry of Norfolk, we know this costs 15 nicker more than our pocket money price limit, but we're prepared to bend the rules if the kit is smart enough. Said rules have been duly bent so that we could show you this extremely affordable, teeny weeny 8GB drive. Corsair has long been one of the main players in the memory market, but its line of flash drives has also been impressive. This is their *piece de resistance* – a quick and capacious flash drive that slips into your pocket and won't die when you drop it in a puddle. If you regularly shuffle large amounts of media about, this is nigh on perfect.

92% **PCF says...** "8GB that will happily hang off your keys."



AV8R Joystick

Price £20 **Manufacturer** Saitek
Web www.saitek.com/uk

It was only a few issues ago that we were lamenting the lack of good PC joysticks (PCF192) and look what should arrive but an affordable, chunky flight stick from long-time waggie-tech supreme Saitek. The ludicrously monickered AV8R joystick is a pinch at £20 but seems sturdy enough to survive even the most canopy-rattling dogfights. The neat split throttle is a feature not often seen on budget twigs, and the big red button is always a welcome addition to any combat-orientated peripheral. Our only gripe is that the four switches aren't as tactile as we'd like. Still, there's no shortage of buttons to configure.

86% **PCF says...** "Affordable, but sort out those switches."



iHiFi

Wireless tunes played thorough your home stereo

Price £63 Manufacturer Zoom Web www.zoom.com

We all know that adding the letter 'i' to your product is the way to shift hundreds of thousands of units but, even so, we've never seen quite as unfortunate a victim of the vowel shotgun as this particular piece of kit. Fortunately, it's a useful device, enabling you to connect a bluetooth receiver to your stereo and stream tunes from your MP3 player. Neatly skirting around the problems faced by the iTrip and other radio transmitters, it has an impressive range – we almost had to dive out of the plate glass windows at the other end of the office to break the connection. Your average house shouldn't pose any real problems.

The transmitter itself charges via USB, or by dangling it from the base station's power cable, and will connect to just about anything with a 3.5mm headphone socket, though it fits most snugly on the end of an iPod Mini or Nano. It's rather pricey, but we admire the sheer distance from which it works in our already WiFi-added office.



Babblestick

Price £20 Manufacturer Babble Web www.babble.net

We've been wholeheartedly impressed by the rise of VoIP and products such as the Babblestick do nothing to shake our faith. Providing ludicrously cheap international calls (plus 30 free minutes every day to several international locations for the first three months) this is a fantastic way to keep in touch with far-flung chums. Texts are 5p and UK calls are all at the local rate of 1p per minute but, because the stick auto-runs at any computer, this applies when you're in some grotty internet cafe in Tijuana as well. Frequent travellers or those with lots of relatives abroad will find this very useful indeed.



Nabaztag

Price £80 Manufacturer Nabaztag Web www.firebox.com

The premise behind this large plastic rabbit is that it sits away from the computer, flashing and wagging its ears, and imparts information from the internet. The Nabaztag will read out messages, follow the stock market and tell you the weather, all via WiFi. Or it would, if we could actually register the damned thing. Unfortunately, our unit didn't seem to want to chat to the Nabaztag website at all. While we were able to 'enjoy' some flashing lights and wagging, we had no way to interact. So it costs £80 for a plastic rabbit that wiggles and doesn't provides any useful information. Why?



Natural Wireless Laser Mouse 6000

Price TBC Manufacturer Microsoft Web www.microsoft.com

The problem with ergonomics is that sometimes the devices feel as if they've been lovingly shaped to fit the human hand, but more often they feel like they'd be better used with a hoof. Microsoft's latest squeaker looks like a mis-shapen potato and, despite claims that it feels as comfortable as a handshake, we'd be inclined to say that shaking hands with Mike Tyson would be better. A raw patch on the ball of our hands and the blancmange-like scroll-wheel means we'll be back to our boggo pointer in minutes. If you find your carpal tunnel playing up, however, this could be a godsend.

Long term test

RATINGS BEYOND THE WARRANTY

TerraTec Cinergy XS



The old orange and white colour scheme sported by the TerraTec Cinergy XS is something I've long had a thing for. In fact, my first ever website (long since dead) had the same unholy in its décor. Unfortunately, much as the hardware soothes my eyes, the analogue TV feed does the opposite. As you may know from assorted PCF whingings, usually from myself, Bath has no digital reception – this pretty much writes off the Cinergy because as the device heats up (and it gets searingly hot), its analogue picture becomes jerkier than a bodypopper on the end of a cattle prod.

On the few occasions I fall into an area reasonably close to a digital transmitter, though, the stubby aerial provides a perfect digital stream with none of the pops and clicks of the analogue signal. The software has a slick interface, the video quality is good and it even comes with a ruddy remote control. So it's crushingly disappointing that this so-called hybrid doesn't quite deliver on its promise. One day, someone will design me a teeny USB hybrid stick that works perfectly and doesn't singe the desk behind my laptop. When that day comes, I'll be a happy man.

Mike Channell

Tell us yours...

Send us a 200 word review of long-treasured kit and if we print it, you'll receive a rugged, long lasting PNY Outdoor Attache 512MB USB memory stick. Mail your reviews to pcfmail@futurenet.co.uk.



90% PCF says... "Cheap, simple VoIP with a strong service."

54% PCF says... "Not the phenomenon it hopes to be."

78% PCF says... "It won't suit all, but some may fall in love."



LEADER OF THE PACK

Adobe Photoshop Elements 5

Early editions of *Photoshop Elements* set the standard in budget imaging software. The latest release adds a touch of class, and some welcome new features...

Price £69 **Publisher** Adobe **Website** www.adobe.co.uk

The full-blown version of Photoshop (all £600-worth of it) has long been the de-facto standard for professional image editing. In the same way, Photoshop Elements has been the mass-market imaging software of choice for the rest of us. The main attractions have always been that you get most of the power of the full-on version of Photoshop, but at just over a tenth of the price, while Elements is also seen as much friendlier, more approachable and a whole lot easier to get started with.

Elements 5 is almost like two complete programs in one. First, there's the Quick Fix mode, in which a ludicrously simple yet effective interface makes it a doddle for absolute beginners to turn good shots from their cameras into great images, with the minimum of mousing around. It's all down to the Quick Fix tool palette, which contains four sections for General Fixes, Lighting, Colour and Sharpen. Dip into any of these and you'll find a set of sliders that you can drag backwards and forwards, enabling you to preview the effects live in the main image window. For example, the Lighting section comes

complete with sliders to lighten shadows, darken highlights and change midtone contrast. And if even that sounds like too much effort, each of the four main sections has an Auto button that you can click to let Elements do the brainwork for you. Impressively, the software gets things just about perfect more often than not.

FULL EDIT

Switching away from the almost over-friendly Quick Fix mode, the Full Edit interface is all about power with control. There are still many automatic fixes on offer, available from the Enhance pull-down menu, but the real joy of this mode is the wealth of hands-on tools. Many of these are brought in direct from the full edition of Photoshop, such as the tools for dodging and burning and for removing blemishes and other imperfections from skin, and they work just as supremely well.

One glaring omission that Elements has always suffered from was a Curves adjustment tool, so that you can, for example, create a classic S-shaped curve for increasing contrast. That's been put right now, as Version 5 not only

YOU SHOULD ALSO CONSIDER...

- >> **Picasa**
Google
- >> **The GIMP**
Open Source
- >> **Photoplus**
Serif

has a new Colour Curves feature, but one that works in both Simple and Advanced modes, making it wonderfully easy to use.

Also new to this version is a handy colour to black and white converter, which has a wealth of different sampling options, complete with preview windows, which makes it both quick and blissfully easy to get the results you want. Another cute new touch is that, in the Organiser section, where you're able to sort out all your pictures, you can attach photos to maps of the world with virtual

push-pins. Most importantly, though, Elements 5 just makes it simple to get the best possible quality out of your digital photos.

Matthew Richards

"Impressively, the software gets things just about perfect"



Needs Windows XP SP2, 1.3GHz Pentium 4, 256MB RAM, 1.5GB hard disk, 1024x768 24-bit graphics.

Wants 512MB RAM

96% **PCF says...** "New, improved version that makes good photos look great, simply."

FEATURE CREATURE

Ulead PhotoImpact 12



A new release that lives up to its name

Price £50 Publisher Ulead Website www.ulead.co.uk

PhotoImpact 12 comes with a mighty feature list that, on paper, puts rivals like Photoshop Elements and Paint Shop Pro slightly in the shade. For quick and not too dirty editing, there's a range of Express and One-Click fixes for correcting colour casts, adding sharpness, altering relative exposures in highlights, midtones and shadows, and plenty more. In our tests, however, the

fully automatic 'fixes' didn't work with the same degree of precision as in Photoshop Elements.

One particularly handy tool is the white balance control, which almost negates the main reason for shooting in RAW, as you can apply white balance adjustments to JPEG images. The digital camera noise removal tool also works well. Overall, there's a lot to love in here, especially if you're buying on a budget. **Matthew Richards**



Needs Windows 2000 SP4, XP SP2, Pentium III, 256MB RAM, 750MB hard disk, 1024x768 24-bit graphics

Wants Pentium 3, 512MB RAM

86% PCF says... "A smart, powerful set of tools for your money."

FREE LUNCH

Corel Snapfire 1



It's free, but is it actually any good?

Price Free Publisher Corel Website www.corel.co.uk

Companies as corporate as Corel don't usually give away fully working software for free, but Snapfire is a notable exception. In spite of its zero price tag, Snapfire has a wealthy feature list, which includes simple download tools for copying photos from camera to PC, for organising them once they're on your hard drive, and for polishing them up with nifty enhancement tools.

In more detail, the organisational aspects include photo trays for both photos and

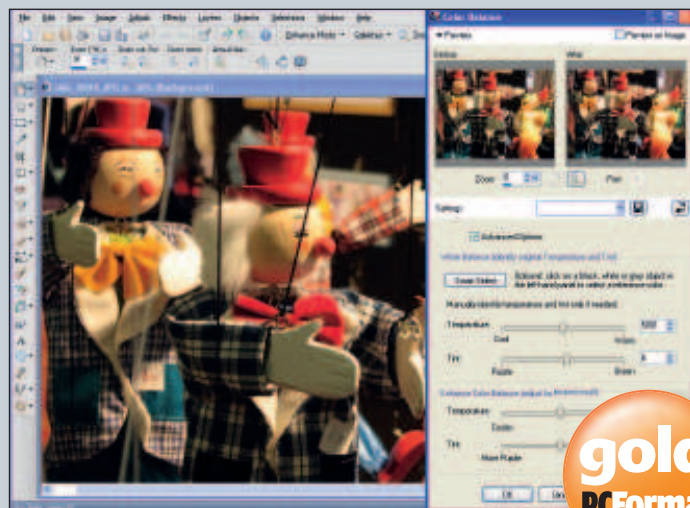
videos, complete with filename and keyword search facilities. On the editing front, a basic yet effective range of 'Quick Fix' tools includes rudimentary adjustments for brightness, contrast, colour and cropping, and for turning colour photos into black and white with a single click. You can also create scrapbooks, cards, collages and calendars and share Snapfire Shows of your shots online. A Snapfire Plus edition is also available for £30, with a broader set of tools and basic video editing apps. **Matthew Richards**



Needs Windows 2000 SP4 or XP SP2, 500MHz Pentium 3, 256MB RAM, 500MB hard disk, 1024x768 24-bit graphics

Wants Pentium 4, 512MB RAM

80% PCF says... "Cool tools considering its zero price tag."



gold
PCFormat

PIMP DADDY

Corel Paint Shop Pro XI

With more power, Corel's latest edition of an old favourite is a real contender

Price £90 Publisher Corel Website www.corel.co.uk

Unlike Photoshop Elements, which has its roots in professional image manipulation, Paint Shop Pro comes from the other side of the tracks, starting life as a humble shareware screen-grabbing utility about 15 years ago. More recently, its wealth of serious imaging tools and real photographic clout grabbed Corel's attention, who bought the program from its original developers, JASC.

The shiny new Version XI now comes with an enhanced RAW import system for making the most of high-end photography with DSLR and creative compact cameras. Once in the program, images can benefit from just about any brightness, contrast, levels, curves and saturation filters you care to apply, each of which has Paint Shop Pro's customary level of power, flexibility and manual fine-tuning. Better still, histogram displays are now featured within the Levels and Curves tools, making it a bit easier to see what you're doing.

Like Photoshop Elements, Corel's offering includes adjustment layers, which enable you to apply a wide range of imaging effects as layers rather than once-and-for-all adjustments. The big bonus is that you can come back and change the

amount of brightness, contrast or whatever effect you've applied subsequently, controlling how individual effects interact with each other more precisely.

Version XI is now more print-friendly, with a new pull-down list of popular photo print sizes that displays automatically when you use the cropping tool. This makes it easier than ever to crop images for the output size you want, complete with resolution information that displays automatically, so you can make sure you're not asking too much of savagely small crop areas.

One of the main strengths of recent editions of Paint Shop Pro is that you can customise its whole interface to suit the way you work, and this is nicely retained here. There are some intriguing new features, like the 'time machine' for applying ageing effects to images but, overall, this version is a refinement rather than a revolution. **Matthew Richards**

Needs Windows XP SP2, 466MHz Pentium III, 256MB RAM, 500MB hard disk, 1024x768 24-bit graphics

Wants Pentium 4, 512MB RAM

90% PCF says... "More of the same, but definitely in a good way."

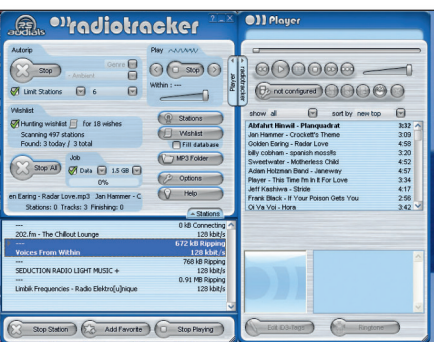
RIP-TICKLING

Radiotracker 3.0 Platinum

gold
PCFormat

Who needs the big bad iTunes shop when you've got one of these?

Price £30 Publisher RS Audials Web www.audials.com



We've come a long way since the days of taping John Peel off the radio, and yet recording music from net radio (aside from the whole illegality issue) has mostly been an awkward matter of bunching a load of programs together to affect the necessary. Not so now with Radiotracker 3.0, though.

This delightfully simple application can start ripping MP3s from multiple radio stations with a few simple clicks. There are several impressive functions lurking inside the program, not least of which is this ability to rip from a raft of stations simultaneously. Sitting ahead of the curve, as we do, we've got the demo version of Radiotracker on this month's disc. That version's restricted to three stations,

whereas this Platinum Edition can handle up to 100 comfortably.

LAZY DAYS

It's an excellent package for the terminally workshy, who wish to fill their MP3 player for a long journey. Want two hours of electro-ambient, or new age yoghurt-weaving? Set Radiotracker up to record and it'll fill your time accordingly.

The Wishlist function is great; set it to look for a selection of artists or specific tracks, and whenever they're played on one of the 14,000+ scanned stations, it'll rip it. Once a track is ripped, in whatever mode, the software then goes on a web-wide hunt for all the info it can find, from artist, through album and even cover art.

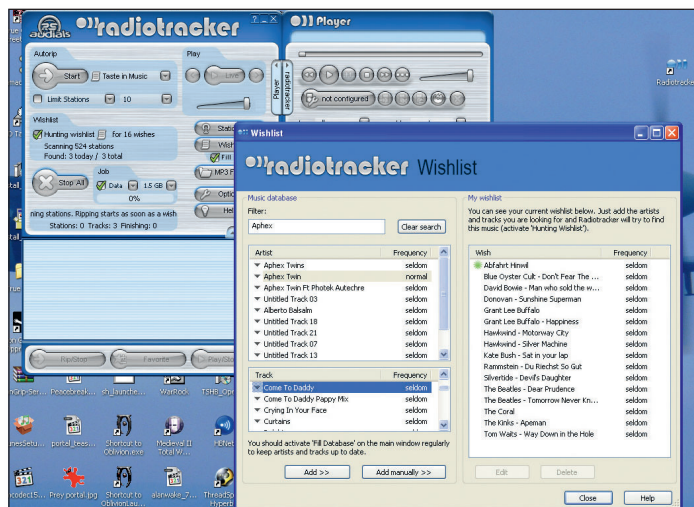
We fell in love with this app, setting it challenges across the office, and within two hours we had a perfect copy of Golden Earring's Radar Love blasting out of our speakers. Bliss.

Dave James

Needs 500MHz CPU, 128MB RAM, 100MB hard drive space

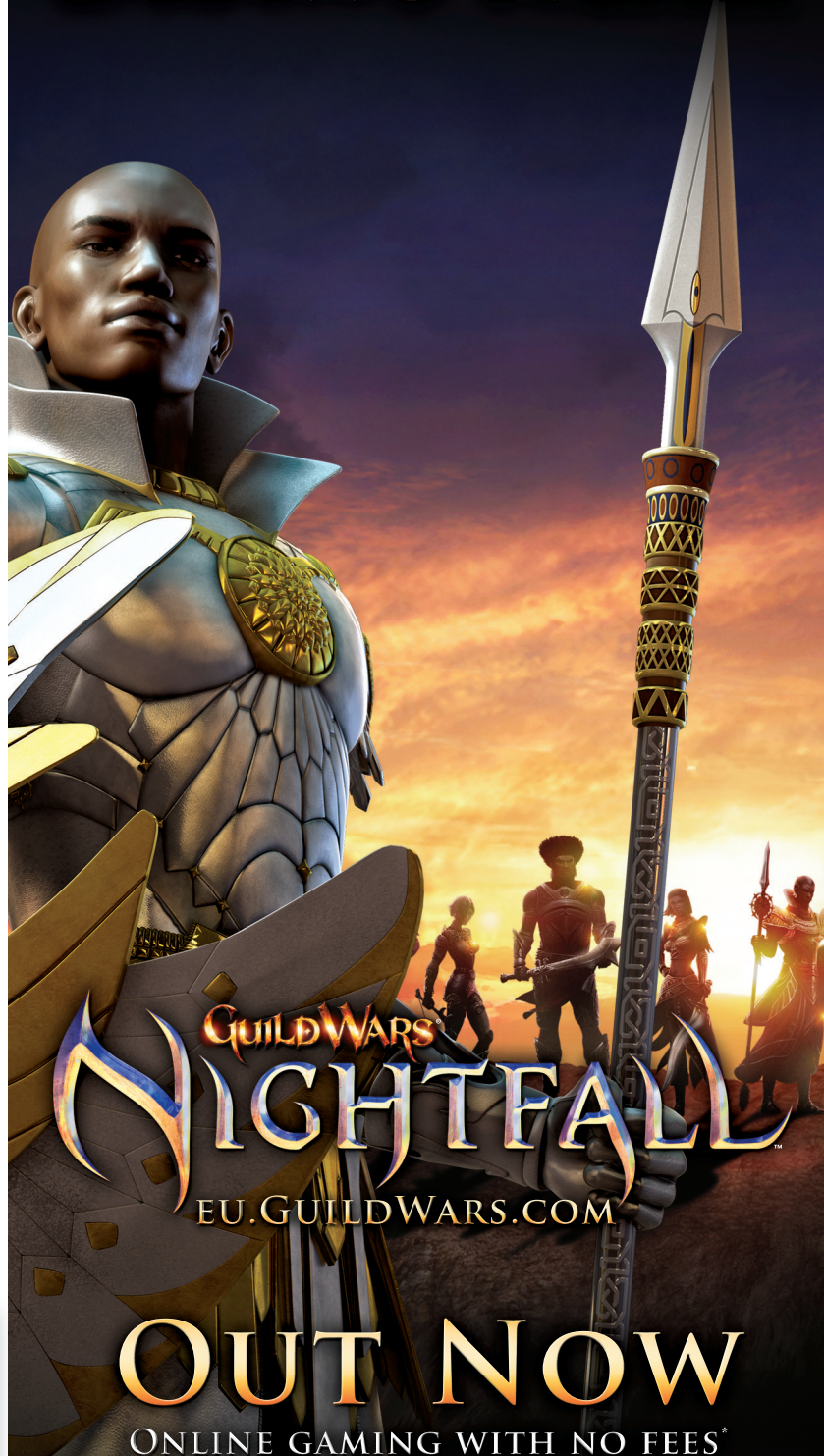
Wants 1.2GHz CPU, 512MB RAM, as much hard drive space as you've got!

91% PCF says... "Fill your MP3 collection to the brim and enjoy."



Found a random track you love? Stick the artist on the Wishlist and wait.

AS DARKNESS FALLS, YOUR DESTINY DRAWS NEAR



OUT NOW

ONLINE GAMING WITH NO FEES*



*Requires product purchase and access to Internet. Player is responsible for all applicable Internet fees.

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"You get the choice between occupying, sacking or eliminating the population"





Apparently, hurling dead, flaming, disease-ridden cows was an acceptable tactic of the period.

STRATEGY

Medieval II Total War

It seems that even the mightiest war leader will be forever under the thumb of *Rome*...

Price £35 Publisher SEGA Developer Creative Assembly Web www.totalwar.com

Now this is familiar. Never before, in the history of the *Total War* series, has Creative Assembly looked back. *Shogun*, *Medieval* and *Rome* were all new areas to explore; this is the first time that an area has been revisited. So what is it about this period – from the Dark Ages to the Early Modern era – that is so fascinating?

Well, it might be the enormous variety of cultures and the fragmentation of the European continent between Muslims, Pagans, Catholics and Protestants. Or the rapid change from poking each other with sticks to shooting lumps of explosive metal at each other. Or the change from clinging to the coasts to sailing the seas. Or the discovery of the New World. Or... yes, we can see why CA's gone back.

MR ROME-MANTIC

You'll notice that we're going to talk about *Rome* a lot. That's because this game is built entirely around the *Rome* engine. Sure, the graphics have been updated to meet the latest standards

and there are a few interface tweaks (including all the ones that were introduced in *Rome*'s expansion packs, *Barbarian Invasion* and *Alexander*), but under the surface this is fundamentally the same game. The same game that doesn't seem to have aged like it should have done. We assume there's a mirror stuffed in an attic in SEGA that has a hideous scrawl of *Cossacks II* on it.

You initially choose from five factions; England, France, Spain, The Holy Roman Empire (enormously powerful but surrounded by enemies)

ON THE DVD

- >> Screenshot gallery
- >> Playable demo
- >> In-game footage



BUY THIS IF YOU LIKE...

- >> *Rome: Total War* Activision
- >> *Shogun: Total War* Activision
- >> *Medieval: Total War* Activision

The 30-minute war

The medieval way to kick your friend's ass



Multiplayer is as good as ever. From the unit selection process, to the armies and units, to the skirmish maps, we love it all. We did have a few problems with errant units running the wrong way, but that didn't justify our losses. The only problem was instability if we set the unit sizes to 'huge'.

gold
PCFormat

and Venice (the underdog). Unlockable later are another twelve factions – Sicily, Milan, Scotland, Byzantium, Russia, The Moors, The Turks, Egypt, Denmark, Portugal, Poland, and Hungary. As with Rome, you unlock these by defeating them in the campaign, or by completing the whole long campaign with one of the five original factions.

Battles are almost identical to Rome, and indeed, to the original Medieval or Shogun itself. You select units with the left mouse button and command them with the right. A nice touch is the new unit highlight button – a single click and it tells you which units are yours and which are the enemies. We did have a few minor problems with units not responding quickly to orders. It's hard to tell if this is deliberate or just a bug, but it definitely made us more cautious. Perhaps due to the increased armour of the era, cavalry charges don't have the same impact as in Rome, which isn't a bad thing in itself.

The campaign map is also nearly identical to Rome, except for a few minor differences. Choosing from either a long



With the campaign map, you'll control everything from building cities to recruiting armies.



Sail across to the Americas to confront the Aztecs.

or short campaign, each faction has a long-term objective, normally holding 45 territories and a town important to them. As these objectives clash with the other factions, you'll find yourself racing to get the neutral rebel settlements first, before the other Christians get there. You don't want to be fighting fellow Catholics because the Pope will excommunicate you, even if they started it. Once you've eliminated the enemy combatants (either on the battle maps or through the useful automatic resolution), you get given the choice

between occupying it, sacking it or eliminating the population. The financial gain from sacking a town makes any other choice daft; occupying is basically the same, without the cash and the only time you should ever eliminate the population is when you know they're going to rebel and you don't want to have to deal with them – Rome's slaves seem to have gone out of the window.

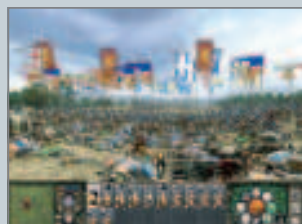
IN A RIGHT PAPAL STATE

The reintroduction of the Pope creates a difference from Rome. He behaves like the senate, endlessly playing factions off against each other to make sure no one becomes too powerful. Alongside him, (the Pope not the Infidel) are missions from your ruling council, or the equivalent, giving you an alternative profit path if the Pope's demands are too extreme. However, if you've got a family member and eight units to spare when he orders a crusade, it's worth joining in. The closer you get to the target, the cheaper you can buy crusading units, giving you an enormous army by the time you get there – which you get to keep after. The downside of a crusade is trying to hold on to what you've taken – it's hard to avoid being drawn into an interminable conflict that bleeds you white, military and financially.

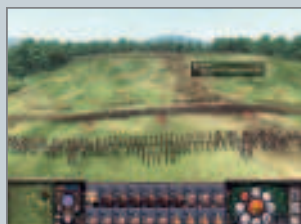
To keep onside with the Pope, it's wise to build churches and have lots of priests. The latter are useful in keeping areas loyal and, if necessary, burning heretics. Should one of your priests behave exceptionally well, they can get promoted to Cardinal and, if your faction

That's edutainment

No one can disguise education quite like Creative Assembly



1 The first of the historical battles, the Battle of Agincourt is a straightforward defence on the part of the English army, shooting down the advancing Frenchies and hiding behind their stake lines. Don't be tempted to move your billmen, as the French cavalry didn't all come from the front.



2 The Battle of Hastings is, like the real event itself, slightly drab. The Saxons are stood on top of a hill, with their flanks covered by woodland, while your Normans are stuck at the bottom. Tempt their impetuous huscarls down, ride them down with your cavalry, then you can become king of the hill.



3 The Conquistadors didn't have it all easy in the Americas – this battle, where they fought an enormous and fearless Aztec army, must have been pretty tough for them. Unluckily, the Aztecs have never seen cavalry before so their light infantry can be easily ridden down.

UP CLOSE ON THE FRONT LINE



Roster tin

Your units are listed here, with their upgrades, ammo and how many of them are left – important whatever the situation.

Mappa mundi

In the bottom left corner is the very handy minimap and the extremely useful time controls.

Green and pleasant land

Haven't they made it look nice? They must have spent hours on those trees. And the grass waves around like it's real.

Black gold

Gunpowder units don't simply do a lot of damage; they scare opponents too, especially animals. Pity there's no burning pigs in this one...

The panic button

If you can't work out what's going on, hit this to instantly see who's left alive from your magnificent horde.

is well-liked, the Pope himself. Then you can start ordering your own crusades...

Princesses are the second new agent class, able to conduct negotiations or marry enemy generals, bring them over to your side – watch out though, as they can be seduced away. The final new class of agent is the Merchant. You don't exploit resources automatically anymore, but require a merchant to utilize them. As merchants are relatively expensive, it takes many turns before they pay back on the investment. Moreover, as merchants are vulnerable to other merchants (who can 'buy them out' without provoking hostilities), we recommend saving your cash for more effective units like spies.

THE NEW WORLD

Later in the game, Creative Assembly wanders somewhere where it's never been before; the Americas. Yes, when the 16th century starts to roll around, a random event crops up allowing you to sail the ocean blue and conquer the Americas – if you've got enough spare boats by that point. However, it's not all sweetness and light. Despite their flimsy armour and worship of any white man as Quetzalcoatl incarnate, the Aztecs who you'll be fighting are indomitable fanatics, like the naked fanatics in

Rome. Ranging from the Jaguar Warriors to the Coyote Priests, they seem to have no fear. No matter how many you cut down, they just keep on coming. Instead of butchering a few and waiting for them to run, you have to conserve your troops and slaughter as many as possible without too many losses. Which was basically Cortes' foreign policy when he tried it, so that's nicely accurate.

EDUCATIONAL TOOLS

Away from the Grand Campaign, the historical battles have improved. We criticised *Rome* and its expansion packs for not making more of these, so we have to say we're pleased with the large

selection on offer. Lord Puttnam has been banging on about how games should be educational tools in schools – what are these historical battles, if not educational? From Agincourt to Hastings and Pavia, they're all well-explained and, on the harder difficulty levels, tough to come away from with anything resembling a structured army.

M11:TW is *Rome* in fancy 16th-century clothing. Unfortunately, they're the Holy Roman Emperor's new clothes and we can see right through them. They reveal *Medieval* to be nothing more than *Rome* with more units, a more varied selection of countries, a massive campaign and development tree, the Americas and a load of useful tweaks that we wish we'd thought of first. Like its parents *Medieval*, naked, is surprisingly well-endowed.

Dan Griliopoulos

"M11:TW is Rome in fancy 16th-century clothing"

Heresy!

Why you should try and stay pope-ular



You don't want to mess with His Holiness. Firstly, there are rewards for carrying out his wishes. Secondly, you'll get revolts if you buck him. Thirdly, he can have your characters burnt at the stake. Fourthly, he can send Crusades off – good if you take part, bad if you're on the receiving end.

Needs 1.8MHz CPU, 512MB RAM, 128MB 3D card

Wants 2.4MHz CPU 1024MB RAM, 256MB 3D card

Net gaming 21 factions, custom armies, custom battles, eight players

Discuss pcformat.co.uk/mag/med2

90% **PCF says...** "A bewigged, flouncing, educational *Rome*. Wonderful stuff."

GET KNIGHTED

Mage Knight Apocalypse

Ladies and gentleman, what we have here is a stinker...

Price £30 Publisher Bandai Namco Developer Deep Silver Web mageknight.namco.com

When a game takes over half an hour to install, then insists on an online patching process that takes a further 10 minutes out of our already busy lives, it's safe to say that the odds of a high score are not all that good.

Sadly for this abomination, that's exactly what happened and what was to

BUY THIS IF YOU LIKE...

- >> **Oblivion**
2K Games
- >> **World Of Warcraft**
Blizzard
- >> **Frustration and disappointment**

come in the game didn't help our usual merry disposition. At a time of year when great games are being released left and right, it's inevitable that someone will try to sneak out a stinker. Even in pre-*Oblivion* days, this would have been a pretty poor effort. So what's wrong with it? Oh, the agony of choice.

UNCONTROLLABLE MESS

The most damning flaw with this RPG is the control system. A top-down view may not be quite so bad, but the characters are so difficult to control that what sets out to be an involved RPG ends up playing like *Golden Axe* on the Megadrive. We wrestled with the movement controls, but they just didn't seem to agree with us, which makes combat an incredibly haphazard affair.

Another problem we have is in the lack of originality. You can choose to

"Reminds us of playing Golden Axe on a SEGA Megadrive"



Witness the excitement of little men running about, fighting one another. Yawn.

take up your quest with one of five characters. Two stupidly scantily-clad females, one big, young warrior and one really squat warrior (who is, of course, older) with an added lizard-like creature thrown in for extra rubbishness. Of course, they all have their own unique skills, but due to the control system, that's not entirely obvious.

Because of the silly top-down perspective, the graphics are also utterly uninspiring. We can't think of a time throughout the history of the PC when this might have been considered a well-executed title.

Andrew Sutcliffe

Needs 1.8GHz CPU, 512MB RAM, 128MB 3D card

Wants 768MB RAM, 2.4GHz CPU, 768MB RAM, 256MB 3D card

Net gaming Up to five players

34% **PCF says...** "There are plenty of better games around at this time of year. Avoid this one."



It's top-down, which as RPG aficionados will tell you, gets very dull, very quickly.

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There are some seriously desirable motors in *Carbon*'s garage, and they're yours to deform.



It's hard to make an Aston DB9 look hideous, but it can be done.

ELEMENTARY RACER

Need For Speed Carbon

Sideways at 150mph down a winding mountain pass? The Richard Hammond school of driving is open for business...

Price £30 Publisher EA Web www.ea.com

Another year passes and right on cue we hear the distant rumble of a *Need For Speed* game rolling up to the line. Last year's *Most Wanted* was a success in as far as a franchise sequel can be, shaking up the format with fraught police chases that made you feel like a dirty criminal. Arguably the biggest change, though, was that *Most Wanted* ditched the dark, reflective streets in favour of autumnal colours and sepia-tinged daylight. Finally, the EA polish was matched by a decent stab at an artistic vision. When the first shots of *Carbon*'s dark streets began to filter through, we got a little bit grumpy.

Despite the return to the visual staple of all street racing games, there have been some refinements under the hood. EA would argue that the biggest addition is the new Wingman system, where you have a buddy who either provides slipstream for you, works out shortcuts or simply takes your opponents out with impunity. While it's a mildly diverting way of forcing your way to the front, it's hardly high strategy.

In fact what's really important is that there's now a new mode based around tight and winding canyon roads, and that

there are now up to 11 other cars on track at once. The series has been aching for bigger races since it first appeared in 2003, and extra cars masking the fact that it's still a slightly sanitised racing experience.

ORIENT EXPRESS

The canyon stages, based on the ludicrous Japanese pastime of Touge racing (see the boxout below), are an excellent addition to the *NFS* stable of events, providing for the first time an element of danger as you battle to avoid

BUY THIS IF YOU LIKE...

- >> *Need For Speed Most Wanted*
EA
- >> *Midnight Club 2*
Rockstar
- >> *Outrun 2006 Coast 2 Coast*
Sega

Grand canyon

Touge can play at that game



Developed in Tokyo, Touge racing involves two cars and two runs along a mountain pass. The car behind is trying to stick to the bumper of the car in front, and while leader tries to leave its opponent for dust. This is tempered by the threat of a sheer drop and a brisk stop if you stuff it up.



The introduction of muscle cars means beasts like the Dodge Charger abound.

clattering off the edge of a mountain. The return of the drift event, on the other hand, reveals a nightmarish minigame where the handling of your car is drastically enfeebled. Even those capable of finely tuned powerslides will be pinged off the barriers in a parody of the laws of physics.

Underneath all the gloss, this is much the same as the previous three games, and in some ways a step backward since *Most Wanted*. The new territory system provides at least the illusion of freedom, but *Carbon*'s city is devoid of life, and variations between the districts are dampened by the endless night. We still had fun, but it's time for EA to start taking some genuine risks with this series.

Mike Channell

Needs 1.7GHz CPU, 512MB RAM, 64MB 3D card

Wants 2.8GHz CPU, 1GB RAM, 256MB 3D card

Net gaming Up to eight players LAN/online

Discuss pcformat.co.uk/mag/nfscarbon

78% PCF says... "Engaging enough, but where's the innovation that the franchise so badly needs?"



This is no time to be eyeing the welcoming glow of the casinos, but our man likes a flutter.



Why – three of you... one of me... I make that silent assassin o'clock.

NEW SNEAKERS

Splinter Cell Double Agent

James Bond meets Jack Bauer, meets some guy who escaped from Cirque du Soleil... it could only mean the return of Fisher

Price £35 Publisher Ubisoft Developer Ubisoft Web www.splintercell.com



Of all the holes in all the ice floes in all the world, you had to fall through mine...

Now that he's starring in his fourth game, you'd think Sam Fisher would be considering packing it in and collecting his pension. But no – he's set himself up for another stealth adventure, this time involving a dash of moral ambiguity as well as the series' traditional sneaking action.

Sam's infiltrated a terrorist sect, and is tasked with various evil missions, such as planting bombs and whatnot. The cell's ultimate aim is to destroy several prominent US cities, and it's up to none other than our Sam to prevent them achieving this goal. It's this conflict of interest which sets *Double Agent* apart from its predecessors; because of your precarious position within the terrorist ranks, you must complete often contradicting objectives for both the bad guys and the government you work for within the same mission.

For instance, what would you do if asked to kill an innocent man to prove your loyalty to the group you're infiltrating? Or what if the death of one person could save the lives of thousands? Each decision you make affects your standing with your respective employers, and *Double Agent*

soon becomes a matter of balancing the trust levels of terrorists and good guys alike. This even extends to sections of the game which allow you to wander about the terrorist base.

GO YOUR OWN WAY

Given some menial task (be it a training course, or building some mines), you're offered a 25-minute window in which to sneak away from your work and gather intel on the bad company you're keeping. As soon as you've finished snooping about and avoiding detection, you must

BUY THIS IF YOU LIKE...

- >> *Splinter Cell Chaos Theory*
Ubisoft
- >> *Thief: Deadly Shadows*
Eidos
- >> *Hitman: Blood Money*
Eidos

return to the room in which you were left to complete your menial task and, if you're good enough, nobody will ever know you'd even left. Did somebody say Jack Bauer? This is the closest *Splinter Cell* has come to mimicking 24, and Ubisoft has pulled it off with aplomb.

Double Agent is full of clever set-pieces, and the beautifully animated Fisher moves with his usual spider monkey-like acrobatic grace, and there never comes a point where you feel like you're not in total control of his actions. Some instances of idiotic AI are apparent, and we would've liked to see the trust system yielding a few branching missions based on choices you make, but nevertheless *Double Agent* is a magnificent title, and the pinnacle of the *Splinter Cell* series.

Sam Nolan

It's all so quiet
Hurrah! Hide and seek for trained killers!



In keeping with the previous games in the series, *Splinter Cell: Double Agent* ships with an amazing multiplayer mode in which you can play as either a spy or a spy-hunting mercenary. It's just like high-tech hide and seek, only tense enough to bring on a coronary. If you've never tried it, you must.

Needs 3GHz CPU, 1GB RAM, 128MB 3D card

Wants 3.5GHz CPU, 1GB RAM, 256MB 3D card

Net gaming 3v3 online or LAN

Discuss pcformat.co.uk/mag/doubleagent

91% PCF says... "The stealth adventure genre doesn't get any better than this."

GET ME MY GUN

Open Season

We're not sure we can bear much more of this...

Price £20 Publisher Ubisoft Web openseasongame.uk.ubi.com

Steve Irwin, we miss that guy. He stood for all that's exciting about wildlife and inspired many to take an interest in conservation issues.

Unfortunately *Open Season* isn't an Irwin-esque romp through the best of nature. It's a budget safari tour of Northampton.

Of course it ticks all the boxes required for a reasonably committed

ON THE DVD

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BUY THIS IF YOU LIKE...

- >> **The Incredibles** THQ
- >> **X-Men: The Official Game** Activision
- >> **Lego Star Wars II** Activision

movie tie-in – quotations from the film, the original voice actors (Martin Lawrence and Ashton Kutcher) and the all-important celluloid aping graphics. The problem lies with the fact that the game has fallen between two stools – on the one hand you have a game that is a series of ludicrously simple mini-events and on the other you have a control system that would give Einstein brain-ache. This means that anyone young enough to enjoy the 'puzzles' is harpooned by nightmarish mouse

movement, and anyone old enough to master the counter intuitive camera will snort with derision when faced with such mind-numbing tasks.

High points are few and far between as you

meander between each lengthy, unskippable cutscene. The mine cart level is impressive just by virtue of the fact that it feels like *Indiana Jones* and

"Snort with derision when faced with mind-numbing tasks"



Boog needs to complete a range of fetch tasks, all of which are painfully similar.



Characters are introduced through numerous dialogue scenes.

the Temple of Doom, with the camera wildly swinging as the cart screeches around the tracks. It's all over far too soon, though, leaving the opportunity to idly lob Ashton Kutcher's nauseating deer off cliffs the only real remaining source of amusement.

This is a potentially reasonable, largely polished game made dire by controls that are as child friendly as a chainsaw. Buy the kiddies *Lego Star Wars II* instead and we promise that those difficult teens will run infinitely smoother. This is no bear necessity – try barely necessary. **Mike Channell**

Needs 1.5GHz CPU, 256MB RAM, 64MB 3D card

Wants 2GHz CPU, 512MB RAM, 128MB 3D card

Net gaming None

44% **PCF says...** "Boog, the 900lb grizzly bear, would make a good rug and nothing more."

IRREVERENT RTS

Strongholds Legends

Camelot really is a silly place

Price £30 Publisher 2K Games Web www.strongholdlegends.com

While it may not have the most daunting reputation to live up to, the *Stronghold* series has found a loyal fan base among the RTS legion. But it seems with this release, 2K is going for a broader appeal.

It's a particular bugbear of certain members of the team that the word

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> **Stronghold 2** 2K Games
- >> **CivCity Rome** 2K Games
- >> **Cossacks 2: Battle For Europe** CDV

'legend' is so frequently and so heinously misused. In *Stronghold's* case, genuine legends are included. The single player challenge mode enables you to play as King Arthur, Count Vlad Dracul or Siegfried Dietrich. This is an RTS game with a strong fantasy element, including magical Merlin and Sir Gawain (but no Green Knight, sadly).

The emphasis here is on strategy and military fortification. There's much less attention than usual given to the gathering of natural resources – stone, wood, apples – and more on building walls and manufacturing armaments.

It's a good-looking game, a massive leap from the shocking E3 build we saw earlier this year. Refreshingly impressive voice acting also helps to ease you gently into the aptly impenetrable world.

Unfortunately, it doesn't really excel in any particular area. For every decent element there's something about it that irks you. For example, we've already said it looks the part... until you get to the



Annoying features hamstringing the experience every time you start having fun.

coast where the shocking seascape lets the whole vista down.

There's no doubt that it's *fun*. And it's challenging. But, for us, cameo appearances by mythological characters are not enough to raise this game above 'also ran'. Notionally tackling the battlefield as Merlin and Arthur might sound like a nice hook, but a wizard by any other name would still just be a beardy old wizard. **Andrew Sutcliffe**

Needs 1.5GHz CPU, 256MB RAM, 128MB 3D card

Wants 2GHz CPU, 512MB RAM, 256MB 3D card

Net gaming None

72% **PCF says...** "Solid and full of promise, but it never quite delivers the goods."



You can play as the definitive Medieval hero, King Arthur.



There's little more satisfying than crunching an overweight, overpaid striker.



Stamping on a player's nuts should still only be a yellow.



The zoomed out camera is the best for tactical plays.

GOLDEN BALLS

FIFA 07

An action-arcade game with more round things than you'll find at a Cosa Nostra ball-breaking competition...

Price £30 Publisher EA Sports Developer In-house Web fifa07.ea.com



The football season is upon us once again, and all the heavy-weights are releasing the newest versions of their ageing licences. *FIFA 07* is first up, stealing the march on its closest rival, the ubiquitous *PES*, and hoping to get points in hand before the rivalry kicks off anew.

Don't feel too cheated if you shelled out for the World Cup version just a few months ago – the match engine's been heavily tweaked and it does make for a different experience. Obviously it's still football, so it's not *that* different, but therein lies the real change – you actually have to play *FIFA 07* like a real game of football rather than a 27-a-side kickabout in the local park.

INTELLIGENT PLAYERS?

Play is a lot more measured, you have to wait for your players to lose their markers and find space before slotting in that pixel-perfect through ball. Again there's the button press that makes your team-mates make a run off the ball, but there's no guarantee that they'll find space as the AI players will track them.

The players also have more of a physical presence on the pitch, jostling

each other for the ball and holding others off with a well-aimed shoulder. With certain characters, though, this does make for an easy time as some strikers will, more often than not, be able to drift past their markers into the penalty area for a simple goal-scoring chance, even on the world class difficulty setting. Fortunately this is only really a minor problem, as most of the goals are gratifyingly different.

Still, even with all the licences in the world, *FIFA 07* feels like it's playing catch-up to *PES*; there's just something

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

>> **PES 5**
Konami
>> **FIFA 06**
EA Sports
>> **Sensible Soccer**
Codemasters

Beautiful game

More Beckham than Dowie



The technical wizardry hasn't dulled the presentation, as *FIFA* still retains its crown as the real beautiful game. The match engine is excellent with accurate and fluid animation that rarely looks forced. The Management Mode too beats *PES'* Master League in both looks and accuracy.

"You actually have to play FIFA 07 like a real game of football"

that's somehow more *football* about its rival. Goals aren't *quite* as satisfying if you don't have to work *quite* so hard for them; but perhaps at heart they're simply two fundamentally different games. *PES* has the straight-laced sim sewn up, but this iteration of *FIFA* really has the fun action-arcade side catered for. Make no mistake, this is the best version of *FIFA* ever and maybe even the most fun-to-play arcade footie game ever.

Dave James

Needs 1.3GHz CPU, 256MB RAM, 32MB DX9c card

Wants 2GHz CPU, 512MB RAM, 128MB DX9c card

Net gaming Internet or Lan

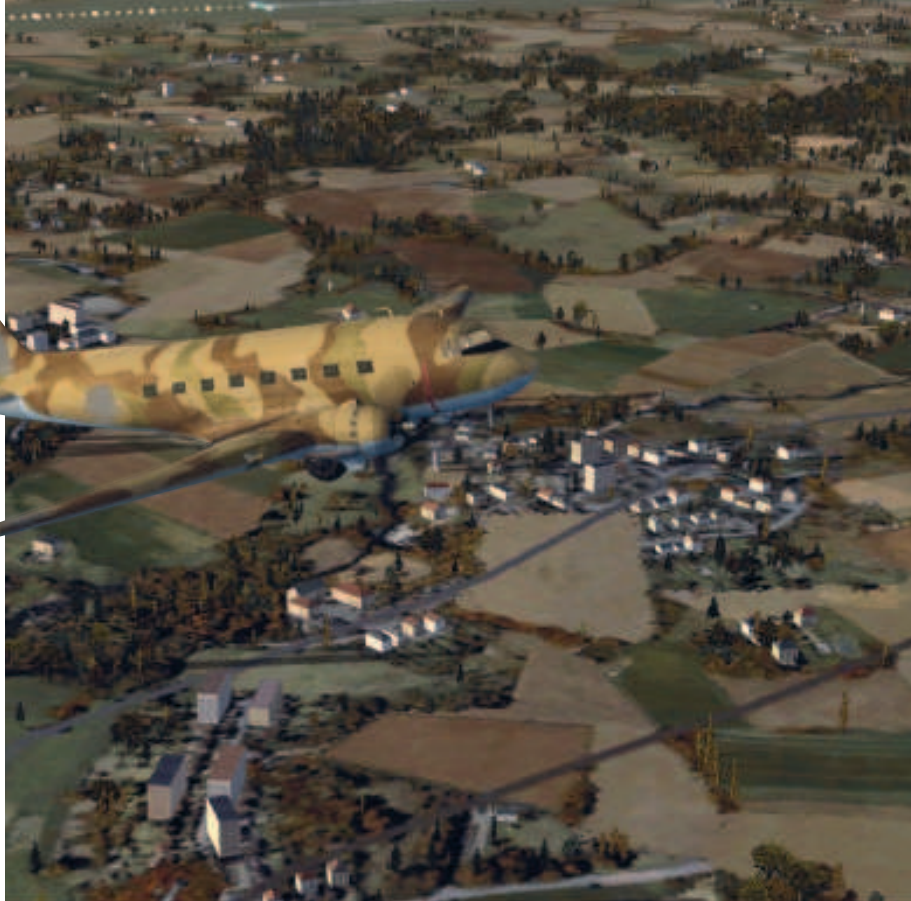
Discuss pcformat.co.uk/mag/fifa07

82%

PCF says... "If *PES 6* doesn't deliver this time round we could be looking at a new champion."



The Trike Ultralight. Not even your crash helmet can save you now.



The Douglas DC-3 Dakota transport, a WW2 antique. Built like a tank. Flies like a tank.

IN-FLIGHT ENTERTAINMENT

Flight Simulator X Deluxe

Turkey, or eagle? *Flight Simulator X* has been crammed full of simulation goodness. But has it become too big to get off the ground?

Price £60 **Publisher** Microsoft **Developer** Microsoft Games Studio **Web** www.microsoft.com/games/pc/flightsimulatorx.aspx

Microsoft *Flight Simulator* has always been one of the rare PC experiences that can be mapped to something that happens in the real world. You're not likely to encounter characters from *Prey* or *Half Life* in real life – not even in the rougher parts of London on a Saturday night. But *Flight Simulator* doesn't just go head-to-head with models of gravity, aerodynamics, and gallons of highly explosive simulated avgas. It's up against reality itself. The selling point has always been to make flying

ON THE DVD

>> Screenshot Gallery

BUY THIS IF YOU LIKE...

- >> **Flight Unlimited**
Looking Glass Studios
- >> **X-Plane**
Laminar Research
- >> **IL-2 Sturmovik**
Ubisoft

convincing enough that anyone who's spent ten minutes with it will believe they can land a 747 at Heathrow during peak traffic times, to grateful applause from passengers and instant fame, success and celebrity.

IT'S THE REALITY, STUPID

In reality – not so much. Some aspects of reality – g-forces pressing you into your seat, the feeling of hanging almost upside down in your straps during a stall turn, the bone-crunching agony of diving into the ground at 300mph – will always be impossible to model. But the view outside of the cockpit window is easier to do something about, and it's here that Microsoft has devoted most of the R&D effort. This version of *Flight Simulator* comes on two DVDs and includes a mighty 14GB of terrain, landmark and location data, covering some 24,000 airports across the world.

Flying over London you'll see the Millennium Dome, Canary Wharf and Battersea Power Station. In the distance the landing lights of Heathrow, Gatwick or London City will be twinkling welcomingly. You can also set the time of day, the season, the weather, and – in



The DG Flugzeugbau DG-808S glider. Ideal for serene, if slow, air travel.

Glass cockpit

Not, in fact, a cockpit made of glass



The trend in real planes has been to switch from mechanical instruments to a single or dual LCD panel that can show instruments, radio settings, maps and more. *Flight Simulator X* includes glass cockpits in some of its aircraft. It does do a lot of useful things, but if the screen dies, you die.

a virtuoso display of simulation coding – the height of your seat in the cockpit. Disturbingly, they don't include a pilot figure, so you'll see empty seats flying themselves. Even so, realism remains the keynote, often taken to almost ridiculous extremes. The weather simulator can plug into a network of 6000 weather stations and update weather in real time. Roads now have moving traffic on them, which varies according to the time of day. Air traffic control conversations are more closely simulated, and there's a multiplayer



The time of day settings can create some atmospheric dawn and dusk lighting effects.



Landmarks use texture decals to increase the apparent realism.



The texture mapping looks good, but it's so slow the screen refresh drops to a few fps.



"You can try flying relief runs to the Congo in an old DC3"

mode if you fancy getting together with some mates and looping the loop over the skies of the Gobi desert.

MISSING IN ACTION

So what's missing? Without blood, death and weapons of insane destructive potential, *Flight Simulator* could easily become the game equivalent of taking your PC out for a walk in the park. A short trip to Australia, Scandinavia, or Bournemouth Airport makes for a fun few hours if you're the adventurous type. But unless you're studying for a private pilot's licence, it's hard to shake the



Exterior views can zoom in and out, creating some classic wide exposure lens distortions.

feeling that the excitement factor will soon start to lag. So Microsoft has cannily upped the challenge level by including preset missions. These start with the basics – taking off, flying straight, and landing – and then you can try flying relief runs to the Congo in an old DC3, transporting an engineer to a North Sea oil rig, and ferrying secretive VIPs to Area 51. There's a certain amount of glued-on glamour about these runs, because really they're still about the old *Flight Simulator* basics of flying and sightseeing. But they get you out of the routine of pottering around the local airport and trying to see your house from 1000ft up.

Even so, the final verdict has to be mixed. The positives include plenty of flight action in planes you won't get to sit inside unless you have a few million quid to spare, and others – like the rickety microlight – that scare sane people into staying on the ground. Pick one of the aircraft models, strap in, and you'll find a huge world with a planet's worth of locations to explore.

On the downside, the interface is clumsy, and sometimes irrational, and regular long load times don't do anything to enhance the experience. Graphic

Flying tonight

You get a lot of planes for your money

There are a massive variety of aircraft at your disposal, from the AirCreation Trike Ultralight (a tricycle with a unfeasibly large lawnmower engine attached to a hang glider wing) to the classic Goose Beaver and ever-popular Boeing 747.



Look closely, you can see Albert Square down in the background on the far right.



performance is hit and miss, with generic rent-a-terrain filling in the gaps between landmarks. Turn up the resolution, and even with an über-PC of ultimate gaming power you'll still see textures scrolling in from the horizon towards you at a leisurely clip.

So all told, this is more of a step sideways from previous versions than a smooth acceleration to a new level. If you're new to flight sims and keen to get your wings, *Flight Simulator X* is an easy must-have, as long as your PC has what it takes to run it. But eager users of *Flight Sim 2004* may find that even with the extra detail, there's not quite as much of an improvement in flying enjoyment as perhaps they've been hoping to see.

Richard Wentk

Needs 1GHz CPU, 512MB RAM, 15GB hard drive, DirectX 9.0c card with 32MB 3D card

Wants 3GHz CPU, 2GB RAM, 15GB hard drive, the best graphics card you can afford

Net gaming Unlimited on GameSpy or LAN

Discuss pcformat.co.uk/mag/fsx

78% PCF says... "*Flight Simulator X* is big on detail in theory, but slow and heavy in practice."

KOREAN TEDIUM

Archlord

Is this lord of the manor, or entirely unpeasant?

Price £30 + £9/month Publisher Codemasters Web www.codemasters.co.uk

Well, here we are again. Codemasters has presented us with another Korean MMO. This one at least has a schtick: one player can ascend to the role of ArchLord and control taxes, ride an dragon and wear a fancy suit of armour.

Before all that happens, though, players have to get to grips with some of



At least in good MMOs, all that wandering about is rewarded with progress. Not here.

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> Guild Wars
NC Soft
- >> World of Warcraft
Blizzard
- >> Dungeons And Dragons Online
Codemasters

"Grinding that would test a Samaritan's patience"

the most egregious grinding this side of a sausage factory. Smacking gelatinous cubes about for a pittance of is not fun, and it's not only at the higher levels that gains are thin on the ground.

As a result, there's no real feeling of progression. There are some dungeons to pile through, but as the controls demand that you don't move while attacking, the combat is dreadfully dull.

The outlook is better in PvP, with at the very least a goal (the ArchLord's throne) for inter-guild scuffles. Unfortunately there's barely anyone populating the European servers, suggesting that everyone who owns the game would have to log on at the same time for a

truly epic battle. With *Burning Crusade* arriving imminently, and with ArchLord's reliance on the grind, we can't see servers filling soon. Even if players do get to a high enough level to initiate the



Great! Do this another 55 times in the next five minutes, and you'll win nothing!

final raids against the huge fiery demon, they're unlikely to have any chums who share their penchant for flagellation.

KING OF THE HILL

It seems like the central idea in ArchLord is a reasonable one – yes, it would be fun (for one player per month at least) to be in charge of your fellow players for a time. Unfortunately, thanks to grinding that would test a Samaritan's patience and controls that turn the entire game into a click-fest, playing ArchLord changes from a dull experience to an excruciating one. **Will Holdsworth**

Needs 800MHz CPU, 256MB RAM, 64MB 3D card

Wants 2GHz CPU, 512MB RAM, 128MB 3D card

Net gaming Exclusively

40%

PCF says... "Generic online gaming with a single, barely attainable good idea."

SUN-SOAKED TRADING

Anno 1701

It's time for fun in an 18th Century island. But is it paradise?

Price £35 Publisher Deep Silver Developer Sunflowers Web www.anno1701.com

We're being oppressed like never before," shout your disenfranchised villagers.

They're angry because they haven't got any tobacco, and because they do have the plague and any number of other troubles. However, this is not the cry of a population in despair – it's the cry of



People gather in the center of town to page homage to your greatness.

BUY THIS IF YOU LIKE...

- >> The Settlers 2
Bluebyte Software
- >> Pirates!
Infogrames Entertainment
- >> Civilization
2K Games

one which sounds vaguely impressed. Even when your people are dying, Anno is a perennially chipper, jovial game.

THAT SINKING FEELING

The Queen has asked you to build a new colony, and one that can turn a profit at that. If you're successful, then you're rewarded with a larger, more demanding populace. If you fail, people riot. Complications arise because not everything can be found on your own island. You need to trade with your neighbours, even if you'd rather go to war with them.

The real issue though is that even when presented with specific tasks the game's limitations often get in the way of whatever it is you're trying to achieve. For example, facilities that need to be connected to a warehouse will occasionally claim to be isolated even when circled by roads. Combat, meanwhile, never leaves shallow waters, with boats circling and passing through



Boats from neighbouring islands will come to trade with you.

each other like ghosts. The deeper you delve into Anno, the less believable the game becomes.

This is why the sunny disposition is by no means a bad thing. The tropical lends the game a laid-back charm, and when a frustrating clumsiness threatens to ruin it, all you need to do is focus on the island paradise, watch the cheerful people, and relax... **Graham Smith**

Needs 2.2GHz CPU, 512MB RAM, 64MB 3D card

Wants 3GHz CPU, 1GB RAM, 256MB 3D card

Net gaming 1-4 players

78%

PCF says... "Manages to overcome its many flaws with an inspiring warmth."



Rebuilding the famous mansion isn't a job for cheapskates. No. Builders are much more suitable.



Tony's cleaned up his act, but dealing drugs is still the foundation of his empire.



Cops are much less dangerous than in GTA. You can even talk your way out of trouble.



Aim for the balls for extra points. Tony doesn't shoot ladies any more.

CRACK SHOOTER

Scarface

The World Is Yours



Rush, rush to me old game. No buzz buzz buzz from the yayo... *GTA* nicked its soundtrack – is it payback time?

Price £35 Publisher VU Games Developer Radical Games Web www.scarfacegame.com

You've got to feel sorry for *Scarface*. Much as drugs baron Tony Montana starts the game with his empire reduced to nothing, facing a nigh-impossible climb back to power, his game has to make its mark as one of those most hated of games, the movie licence. Get past that obstacle, and it's still sitting in the shadow of *Grand Theft Auto* – a game that took *Scarface*'s movie story, its setting, its characters and even its title music, and made them its own. All that, and even if it pulls it off, cruel

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

>> *GTA: Vice City*
Take Two
>> *The Godfather*
EA
>> *Mafia*
Take Two

reviewers are still apt to shrug it off as a second-rate *GTA*.

Luckily, it actually *is* a second-rate *GTA*. There are good and bad bits, but the crux of the problem is that *Scarface* never lands that crucial element of playful anarchy. It's slower and stodgier, with too much downtime between cool bits. The combat is generally awful, exploring isn't as fun, evading the police isn't as fun, living the high life isn't as fun. There's no getting past any of this. *Scarface* isn't up to the challenge.

It's not all bad news. Once past the appalling opening levels, it gets the feel of building an empire rather better than *Vice City*. You can call your driver for a car whenever you like, and get started on turf-wars from the beginning. True, everything comes down to the plot-based missions, but at least it does you the service of not treating you like the town's quest-bitch for the duration.

THERE'S THE VILLAIN

Non-violent interaction – conversation, to you – is based around an infuriatingly laggy, but thankfully pretty easy mini-game. You can talk to anyone in the game, getting either scripted chats or

random shouts, but either way, a succession of bad dialogue and non-sequiturs that will make you reel. Most include a word that starts with F; a fair few suggest that Tony's still hitting his supply a bit too hard.

In a world without *Vice City*, *Scarface* might well own the town. However, as the game makes it quite clear, there can only be one boss, and as a game, it's just not good enough to stand toe-to-toe with *GTA*. However, as an interactive experience, it's better than the screenshots, and the other movie licences we've seen of late, would suggest.

True, not the most ringing endorsement, but let's be honest, you were expecting us to beat it black and blue. So were we. **Richard Cobbett**

Needs 1.8GHz CPU 256MB RAM, 128MB 3D card

Wants 1.2GHz CPU 512MB RAM, 256MB 3D card

Net gaming None

Discuss pcformat.co.uk/mag/scarface

64% PCF says... "Not awful, but there's not enough crack in the world to choose it over *GTA*."

Get the money...

Then the power. Then the women



Tony's pick-up lines put even *Leisure Suit Larry* to shame. Hit [T] and the Cuban Casanova leaps into action with the opener: "Maybe don't wear a bra next time, lady!" or "All girls love pineapple!" or our personal favourite, "You look like you've got some s**t on your face!" And he's single!

TECHNO TOYS

Dawn Of War Dark Crusade

Zombies! In space! With frickin' lasers! Which bit of that is bad?

Price £25 Publisher THQ Web www.dawnofwargame.com

More armies, and new units for the existing ones: that's the standard blueprint for RTS expansions and *Dark Crusade* doesn't disappoint. Expanding the *Warhammer* 40,000 race-base to include the technically advanced Tau and the



The mighty monolith hovers over the battlefield, spitting nukes. Silly, but good.

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

- >> **Ground Control II**
Vivendi
- >> **Homeworld II**
THQ
- >> **Company of Heroes**
THQ

"The Tau have the flashiest guns but no real mêlée poke"

Terminator-style cyber-zombies, the Necrons, plus a few new units for each race, *Dawn Of War's* techno toy count goes up by 30%, bringing the total to seven playable races.

And the two new armies do play differently to the others. The plucky Tau have the flashiest guns but no real mêlée poke and no supplementary turret-building abilities. The Necrons are as alien as they appear – they're about relentless advances. The army can take a pounding and, while the rank-and-file don't pay out much damage, they're compensated for by the tech tree toppers, which are powerful.

The singleplayer experience has also changed remarkably. Any kind of story-based game has been eschewed in favour of a campaign map, across which



"Braaaaaiinnssss..." If they had vocal cords, that's what the Necrons would say.

your armies march to subdue all six other races. Your commander unit gets a number of wargear upgrades as you achieve victories, and conquering certain territories confers army-wide bonuses and abilities. The only downside is that you get access to the entire tech tree from the first battle, so there's few surprises later.

Dark Crusade is an essential purchase for *Dawn of War* players and for those untouched by Relic's frenetic 'splode-gasm, we recommend giving it a try.

Al Bickham

Needs 2GHz CPU, 512MB RAM, 32MB 3D card

Wants 3GHz CPU, 1GB RAM, 512MB 3D card

Net gaming LAN, internet, 2-8 players

85% **PCF says...** "An ace expansion to an already ace RTS. Essential for fans"

WAR MONGER

Age Of Empires III The Warchiefs

We're the Kings in America. *AOE* picks a fight in the New World

Price £25 Publisher Microsoft Developer Ensemble Studios Web www.ageofempires3.com

One year on from release modern videogames capitalism dictates it's time for an expansion pack for the massively selling RTS just in time for Christmas. *The Warchiefs* is exactly what you'd expect to



You can train bears to fight alongside you. This is historically accurate.

ON THE DVD

>> Playable demo



BUY THIS IF YOU LIKE...

- >> **Age of Empires**
Microsoft
- >> **Age of Empires II**
Microsoft
- >> **Age of Empires III**
Microsoft

find in such a package. Three new nations are offered for player control – the infantry-lead Aztec, the rush-centric Sioux and the slow-building Iroquois. The latter are the core of one of the game's two new campaigns, with the other centred around Malta – the plot isn't the strong point, as usual.

Returning to *Age of Empires III*, the immediate impression is how much it's aged. Not as much graphically but in terms of how it plays. Compare it to *Company of Heroes* and it appears to have come from a different age. An age where we were happy for our little warzones to consist of lots of little men milling around rather than – you know – warzones. The level of passivity, where troops just out of range won't engage, is shocking in the light of the modern gaming battlefield.

If you persist, however, its basic quality shines through. The best thing is



Brave braves carry a tomahawk into battle. Not so brave braves hide behind things.

still the home-city deck-building concept. No, Ensemble didn't attempt to march up the tech tree in the way their Microsoft stablemate Big Blue Box did with *Rise of Legends*, but it's an RTS made by people who know how the genre works. While this is enough to refresh *Age of Empires* for now, you have to hope that Ensemble pushes the formula a bit further when its attentions turn to *Age IV*.

James Carey

Needs 1.4GHz CPU, 256MB RAM, 64MB 3D card

Wants 2GHz CPU, 128MB 3D card

Net gaming 1-8 players

68% **PCF says...** "There are no real uprisings to be found in *The Warchiefs'* colonies."



Rail congestion is a fairly regular occurrence due to the minuscule maps.



Unfortunately, this is as far as you can go towards customising your company.



It's a mucky business, so nobody tell those tree-huggers. Okay?

REAL TRAIN STRATEGY

Sid Meier's Railroads!

Trains, trains and noticeably few automobiles. All aboard for the choo-chooiest strategy game of the year

Price £30 **Publisher** 2K Games **Developer** Firaxis **Web** www.2kgames.com/railroads

Returning to the scene of one's former glories can be fraught with all kinds of trouble, especially if said scene is populated by a serious fanbase. Sid Meier has bravely returned to the game that launched a thousand *Tycoon* titles, full of noble ideas about making game the way he wanted to 20 years ago. Now, where have we heard that before? What's that, Mr Lucas, Greedo shot first?

Mr Meier has been away from the ol' iron horse for more than a decade and a half, leaving *Railroad Tycoon*'s two sequels in the hands of other developers. *Railroads!* marks his return with beautiful 3D animations, new features and an exclamation mark, but does it still have the obsessive quality that will keep you playing?

Well, kind of. We're big fans of the *Railroad Tycoon* series, having invested many a long hour into the cutthroat wheeler-dealing of corporate transportation, and we were excited to see how Meier could advance the genre. Unfortunately, it doesn't look like he has.

Now, the core concept is one of accessibility. Understandably, Sid and Firaxis want as many people as possible

to play their game and to do this they need the game appeal to as broad a range of people as possible. To this end, the game is far more simplistic than its predecessor, *Railroad Tycoon 3*. The maps are smaller, there are less industrial options and the economic model is more streamlined.

BASIC TRAINING

The problem with this is that, while creating a functioning rail system is as easy as falling off a greased pig, the small maps and the number of AI

ON THE DVD

>> Screenshot gallery

BUY THIS IF YOU LIKE...

- >> **Railroad Tycoon 3**
Take 2
- >> **Transport Giant Gold**
JoWood
- >> **Loco-Mania**
Lighthouse

Going, going, gone

The benefits are patently obvious



The best new feature in the game is the patent auction. Every now and then, a new piece of tech will come up for grabs at auction, with the highest bidder getting exclusive use of the patent for 10 years. This can make the difference to your success in single and multiplayer modes.



competitors means the play area quickly becomes saturated. From there, it's difficult to see where to go within the game, so you'll spend much of your time just upgrading the congested track and buying new trains when you run out of space to expand into. It just isn't as enthralling as spreading your industrial arms across the vast plains of America should be.

It's not that the game isn't fun to play – it most certainly is, especially in multiplayer where the tight confines of the new, smaller maps make for far greater direct competition. The new *Settlers*-style animations are great and there's still the curious joy of the model railway, but it just doesn't quite have the longevity or scale of the last, and still best, *Railroad Tycoon*.

Dave James

Needs 1.4GHz CPU, 512MB RAM, 64MB DX9 card

Wants 2GHz CPU, 1GB RAM, 128MB DX9 card

Net gaming Lan, internet, 2-4 players

78% **PCF says...** "Fun and accessible, but should've been named *Railroads Lite*."

USE THE FARCE

Star Wars: Empire at War Forces of Corruption

Gamer Bored: By Pointless Expansion Pack: Forces of Corruption

Price £20 Publisher LucasArts Developer Petroglyph Web www.lucasarts.com/games/swempireatwar

That anyone wants more *Empire at War* is difficult to envisage. It wasn't terrible, but it was so simplistic that it became dull long before the end of the two sizeable campaigns. Nevertheless, we've been given a third instalment. As before, it starts on the

BUY THIS IF YOU LIKE...

>> **Star Wars: Empire at War**
LucasArts
(Actually don't.)

galactic level with a basic planetary strategy game in which you build up fleets and move them to new planets. This time you play a silver-haired OAP crime lord and his immortal space-badger lieutenant, so you corrupt rather than conquer. It sounds fun, but it's just a case of dragging a Defiler unit to the planet and playing a short, scripted mission in either the 2D space battle mode or the sluggish ground-level RTS.

GOING ROGUE

Oddly, dumping a Defiler on a planet a few jumps away triggers a battle between some of the forces you left at home and an alien race you didn't know you were attacking on the surface of a planet you didn't tell any of your units to land on. In other words, the battles themselves bear almost no relation to your strategic decisions and often contradict the actual locations of your



Felucian maps, while pretty enough, don't warrant the massive drop in framerate.

forces. It would be fine if they had made the story-driven series of scripted missions they clearly wanted to, since the story is the only compelling thing here. Forcing you to play the charade of the galactic game and ignoring the results of what you do is just insulting.

The big problem with *Corruption* is that it lacks the *Star Wars* resonance of *Empire at War* – no-one's heard of your gangster and the units are made of ad hoc mercenaries and salvaged junk. If it had cast us as Jabba the Hutt, we might be in business.

Tom Francis



Epic space battles: right click on enemy, and then go and make some tea.



Needs 1GHz CPU, 256MB RAM, 32MB graphics card

Wants 3GHz CPU, 1GB RAM, 128MB graphics card

Net gaming None

54%

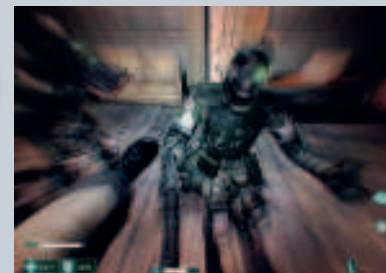
PCF says... "A less than appealing rehash of an uninspiring game."

G.O.R.E

F.E.A.R. Extraction Point

Don't look now – the girl in claret is back and baying for blood

Price £25 Publisher TimeGate Studios Developer VU Games Web whatisfear.com/uk



Spooky chaps and chapesses still jump out it front of you in a semi-comedic fashion.

provoked a fright – certainly not the cold, heart-thudding tension of *Doom 3*.

The same is true here. You get seven more hours of genre-blending but the action is rarely groundbreaking. The shorter duration does help alleviate the repetitiveness and it's well executed. Ultimately though, *Extraction Point* is like a game-to-cinema conversion – a B-movie sequel with second-hand twists and little innovation.

Mark Selby

Needs 1.7GHz CPU, 512MB RAM, 64MB 3D card

Wants 3.0GHz CPU, 1GB RAM, 256MB 3D card

Net gaming Multiplayer

80%

PCF says... "Solid, satisfying violence, but look elsewhere for genuine terror."

With *Half-Life 2* spreading its seed liberally via episodic releases, any FPS worth its salt needs to pay attention. With that in mind, developer TimeGate has made sure that *F.E.A.R.: Extraction Point* picks



Bloody, glorious blood, there's nothing quite like it...

ON THE DVD

>> Screenshot gallery



BUY THIS IF YOU LIKE...

>> **Half-Life 2**
Steam
>> **Doom 3**
Id
>> **Max Payne**
Remedy

up where its predecessor left off – and then some. This is an expansion suited and booted from the word go.

Having completed the original, you'll know there's been an explosion, from which you arise to pick up the pieces.

FREAK OR UNIQUE?

Throwing you into a variety of new(ish) environments, the good enemy AI, battle debris and visual merriment ensure that this is still action gaming at its best. Bullet-time is brought to a near-orgasmic perfection with a fab mini-gun, while red-eyed enemies lurk in dark corners.

Frenetic action aside, it's time for some home truths. Despite the viscera, *F.E.A.R.* was little more than a hybrid of *Half-Life 2* and *Max Payne*. You ran around in slow-mo, shooting clone soldiers, occasionally jumping as a creepy girl demon appeared. And, contrary to its name, *F.E.A.R.* rarely

DUUUUDE...

Earache Extreme Metal Racing

Cochlea-shattering nonsense

Price £15 Developer Data Design Web www.datadesign.uk.com

We've not had a game in the office that actually hurt us for some time.

Earache is designed to batter parts of your anatomy by design, but there's an awful lot of collateral damage along the way.

The brief may have read: "Make a cheap *Rollcage* knock-off where the theme is barbed-wire-for-guts heavy metal and Hell."



Destruction, soundtracked by bands who had unhappy childhoods.

Earache isn't third rate. It sits up all night wailing with angst, wishing it was.

We won't dwell on the frequent crashes and lockups, or the fact that the option screen is a picture of a PlayStation controller with no option to reconfigure keys. We'll ignore the bland design, the sub-DirectX 6-level graphics and the poor track layouts. According to

our metalhead Dep Art Ed the bands in *Earache* are all worth listening to, but for the love of Satan just buy a CD.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1GHz CPU, 256MB RAM, 64MB 3D Card

26% PCF says... "Would actually score more if it gave you tinnitus."

PHYCOLOGICAL PUZZLER

Riff

Warning: may turn your brain to cheese

Price Free Developer TJ Jackson Web www.experimentalgameplay.com

There's a well-documented experiment where the names of colours, are displayed in a colour different from their name (so the word green might be coloured in blue). The subject will find it hard to say the colour, rather than the word. In *Riff*, players must create chains of shapes on a scrolling screen. The chains can be linked by shape or colour, but must be adjacent. So, you could link red square-red square-blue square-blue

triangle, but not blue square-red triangle. See? Basically, one element has to match.

You'll be surprised how hard it is to switch between shape and colour for connections. You're pressured into making links, never given enough time to really get your head around the problem. Our only gripe is that sometimes you can mis-click and break a chain.

It's fearsomely addictive, and we get the impression that prolonged use of the game may cause you to develop a skewed world view, but we thoroughly recommend it.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1GHz CPU, 256MB RAM, 64MB 3D card

70% PCF says... "Ugly, sounds awful, but a killer puzzler all the same."



The shapes! The colours! Aieeeee!

Also out

By James Carey
GAMING ROUND-UP



Tower of Goo Unlimited

Price Free Developer Kyle Gabler
Web www.experimentalgameplay.com

Had he existed, the fourth little piggy would have picked this as his building material of choice. Drops of goo fall from the sky and you drag them up into a wobbly spire. The goo continues to fall as you drag yet more struts into place. Build irregularly, and your tower will topple. The game repeatedly descends into crisis management as you fluster and fix, patch and panic. All this silliness is accompanied by silly accordion music. Charming stuff.

Needs 1GHz CPU, 256MB RAM, 64MB 3D Card

Wants 1GHz CPU, 256MB RAM, 64MB 3D Card

85% PCF says... "Classy, fun and elegant. A great distraction."



Linerider

Price Free Developer Bostjan Ladez
Web www.linerider.org

Games traditionally have goals, structure and some form of reward system. But not this one. The concept is straightforward – draw a series of lines, hit the play button, and a little be-hatted sledder appears and slides down your hastily drawn slops until he either runs out of line to ride, or he becomes separated from his sled. The fun lies in getting him to perform outrageous jumps, somersaults, loops and even death sequences. It's endless, genuinely amusing entertainment.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1GHz CPU, 256MB RAM, 64MB 3D card

80% PCF says... "If only you could do this with a pen and paper."



String Theory

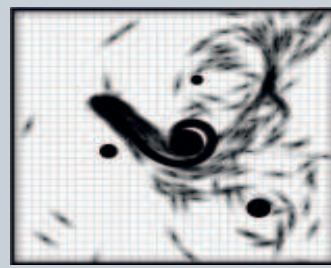
Price Free Developer Dillon Cower
Web www.experimentalgameplay.com

This game casts you as a white dot with an ability to sling webs. Gravity pulls you down the screen and you throw out elastic web to cling to the polygons that make up the level. The screen scrolls in all directions, accelerating over time, and your aim is to stay on screen. You being to learn patterns of keys (or steps with a mat) that allow you to 'walk' fluidly around the map. We can see how a movement system like this could be used in a *Ghost in the Shell* 'Spider-Tank' style shooter. On it's own though, *String Theory* is just a fun experiment.

Needs 1GHz CPU, 256MB RAM, 64MB 3D Card

Wants A dance mat

75% PCF says... "If only of innovation in movement."



Particle Suck

Price Free Developer Kyle Gabler
Web www.experimentalgameplay.com

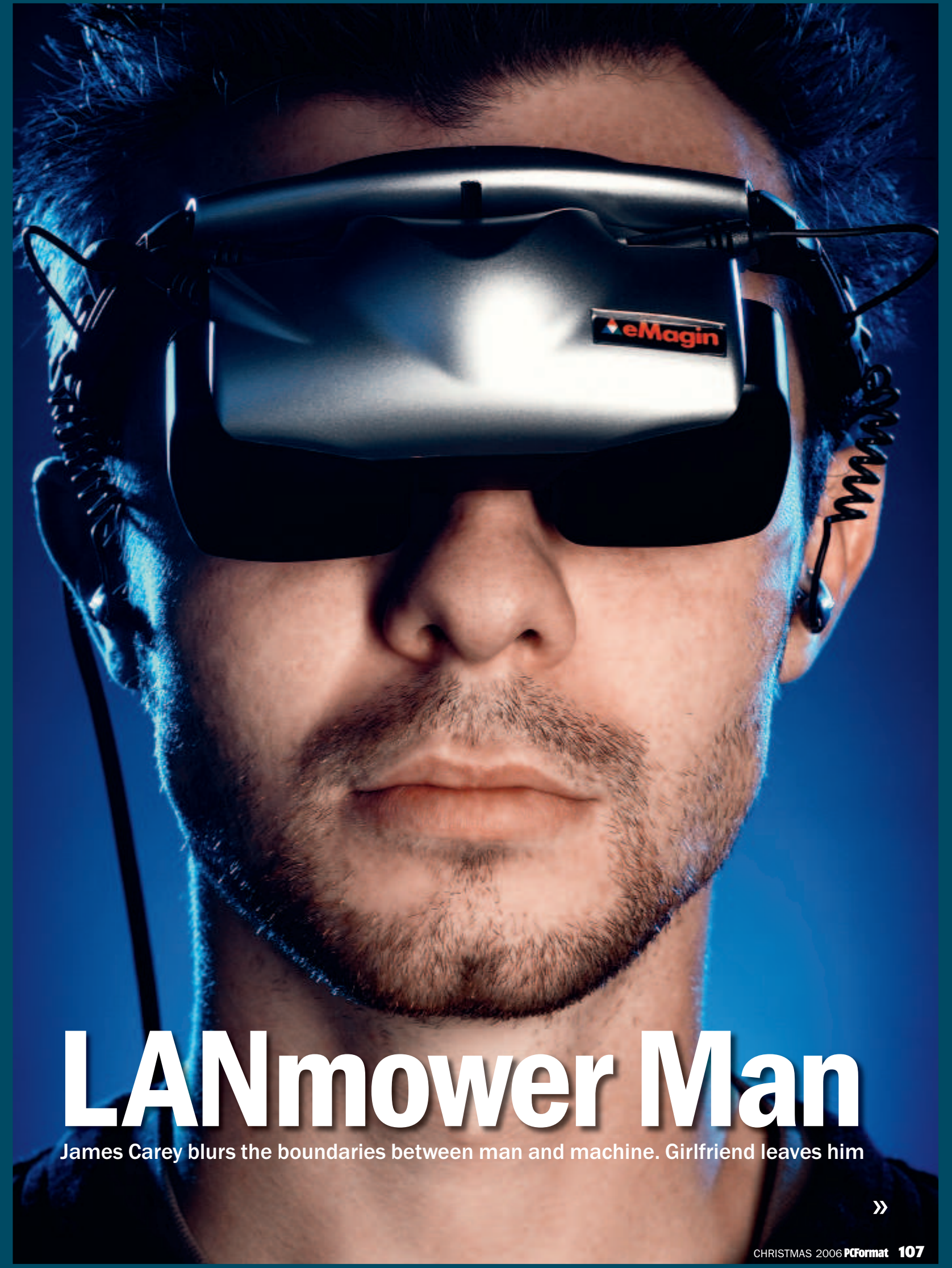
This is more than a physics toy than a proper game. *Particle Suck* gives you a wormhole spewing out particles and then lets you place and adjust the strength of neighbouring gravity wells in order to, well... play with patterns.

If you want you can be all mathematical and work out strength of gravity field versus distance and position, but it's much more satisfying to go with the flow. It's one of those office toys that keep you calm. Great for when life gets that bit too hectic.

Needs 1GHz CPU, 256MB RAM, 64MB 3D card

Wants 1.5GHz CPU, 256MB RAM, 128MB 3D card

70% PCF says... "Calming and starkly beautiful."



LANmower Man

James Carey blurs the boundaries between man and machine. Girlfriend leaves him

»

Despite visuals that the Pre-Raphaelite Brotherhood would embrace with awe, physics models that would've sent Newton spinning and sound quality to make Beethoven weep for his lost lugholes, we still crave more immersion in our games. There seems to be a PCI-e card for everything these days, but we've yet to see a socket for the senses that really satisfies. In an effort to up our immersion we've assembled

the finest collection of kit the consumer market has to offer when it comes to getting you *inside* your games. Boy, did we freak ourselves out in the process. We've quite risked life, limb and eyeball (not to mention our already wafer-thin street-cred) to find out if burying yourself in peripherals can improve your sense of immersion in games. Join us then, as we hard-wire a semi-willing Games Editor into the future of peripheral technology...

AUTOMATIC FOR THE PEEPHOLES

eMagin Z800 3D Visor

Less than 8oz and with an apparent screen-size of 105-inches (as if viewed from 12ft), there's an awful lot of display packed into these Gibsonesque goggles. No only are you getting all that screen in that wee space but, with special drivers available from NVIDIA, you can polarise the two eyepieces and get a frighteningly real-feeling 3D effect. A gyroscopic switch can provide head-tracking mouse emulation, too.

\$550 www.emagin.com

WE'RE GONNA NEED A BIGGER COCKPIT

HOTAS Cougar Joystick

There are flight sticks out there that trade on having the most buttons. The most blue LEDs. The rubberiest grips. Thrustmaster's HOTAS Cougar stick has been simply trading on its build quality for years now. This is the most badass joystick money can buy. Being made of solid steel, it's really heavy and has a kind of no-frills design ethic that screams cockpit authenticity – a must for combat flight enthusiasts.

£89 www.thrustmaster.com



HEADY STUFF

Track IR 4 Pro

The only piece of kit we got in for this feature that Carey actually uses anyway *on a daily basis*. The Track IR 4 Pro head-tracking system offers six degrees of freedom (for the uninitiated, we mean pitch, yaw, roll, zoom, lateral movement and height) to match your head movements to the letter in certain games.

£100 www.naturalpoint.com

WHEELY GOOD

Logitech G25 racing wheel

Complete with clutch pedal, the G25 is easily the best racing wheel on the market. With 900 degrees of rotation lock to lock, which is adjustable if the car in your sim has less, this is an expensive but worthy purchase if you take your driving seriously. Everything from the separate shift stick to the leatherette and brushed-steel finish on the wheel itself and the hydraulic rams on the pedals promise a quality that the performance of this peripheral makes good on.

£180 www.logitech.co.uk

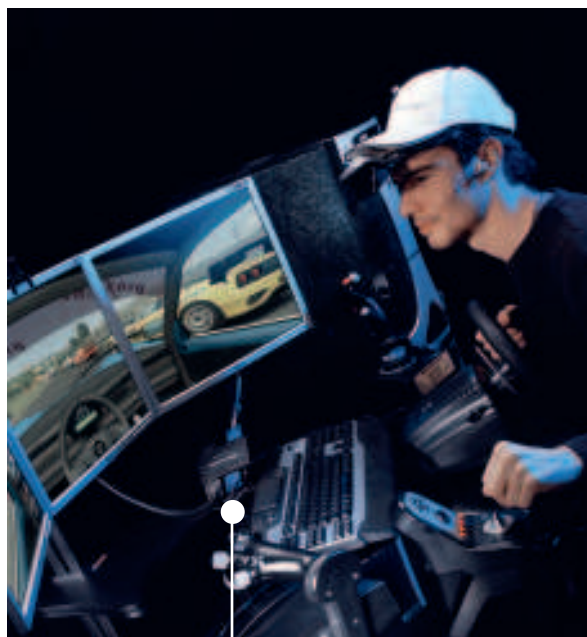
PERIPHERAL PERIPHERALS

QuadVision multiple monitors

Of course, not everyone wants to smother their head in goggles and hats. If you just want peripheral, wraparound vision then a multiple monitor is the simplest and potentially cheapest solution. UK-based Quadvision can supply display setups of *up to 16 panels* if you require, but finding a rig that can run that much screenage is another matter.

£1,000 www.quadvision.co.uk





THREE HEADS ARE BETTER...

TrippleHead2Go and SoftTH

If you want surround-o-vision but you're on a budget, there are alternatives to systems such as the Quadvision display wall. With a TrippleHead2Go from Matrox you can take one output on your PC and pit it across any three monitors. You can even achieve this without the hardware dongle. If you have a SLI setup check out *SoftTH*, a free app that does the same thing without the black box!

£175 www.matrox.com/graphics or www.kegetys.net/SoftTH

» Was it good for you?

In Castle Carey, our Games Ed's office chair has satellite speakers gaffer-taped to the seatback for surround sound. He trails the wires down the back and along the floor, cocooning himself in a nest of cables. He wears a *TrackIR* hat most evenings. He has a Logitech wheel to the left and a joystick and throttle to the right.

Quite why his missus puts up with it we don't know, but we do know that this is a man who'll go to extraordinary lengths to enhance his gaming experience (short of upgrading to Dual Core without a discount, the cheap beggar). But does any of it work?

Surprisingly, yes. The benefits of a multiple screen setup are obvious. If you have the desk space, a SLI system and three spare monitors, we thoroughly recommend you try the freeware *SoftTH* app. For games that support widescreen resolutions and field of view settings (flight sims, *GTR*, *Oblivion*, *Armed Assault* and so on), the boost in immersion is one you won't go back from. If you don't have SLI, Matrox's TrippleHead2Go system will let you spread your image over three screens from a single video out.

Similarly, Naturalpoint's *TrackIR* systems are incredibly useful. They take a bit of getting

used to but the ability to move your head (and thus your viewpoint) independently of keyboard and mouse control adds a natural level of control to your gaming. It's amazing how quickly glancing around becomes instinctive, and how much you miss the ability when a game doesn't support independent head movement.

The other kit is less essential in our view, but no less desirable. The Ultimate Gaming Chair, for example, is a sublime piece of hardware but it's far from classy, and it's expensive. Still, it's got a feature list to die for, not to mention the built-in massager. Does it add any realism? Well, you could get similar aural immersion from a good set of 'phones or a home theatre setup, and there's always the Butt Kicker (www.thebuttkicker.com) if you *must* have a rumbly bum. What it has in spades is exclusivity – you feel *special* in one of these chairs and, ultimately, that's what this kind of kit is about.

The really contentious item though, is the eMagin Z800 3D Visor. If you lived through the 80s you'll have been as bitterly disappointed as us by the failure of VR to take off in any functional capacity but the eMagine unit promises to make your neuromantic dreams come true. In our opinion it succeeds, but something makes up come back to the Multiple Monitor solution in the long run. While the 3D Visor does everything it promises, for everyday use we'd still go for three monitors. That said, the eMagin Z800 is by far the most 'immersive' piece of kit in this feature. It does genuinely feel like you're 'inside' the gameworld in a way that no other device, not even Carey's beloved *TrackIR*, can match, and as such comes out on top of this pile of peripherals.

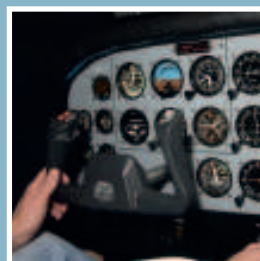


It's the pits!

While our collection of kit is impressive, some people go to greater lengths to blur the line between screen and sofa. 'Simpits' are homebrew cockpits built for flight simulators by very talented people with too much time on their hands. A glance at www.simkits.com/buildersection.php will go to show that the approach we've taken in this feature is nothing compared to the power of the creative hobbyist.

Building your own cockpit is nothing new. In 1929 Ed Link was one of the first pioneers of flight simulation (www.link.com). Along with his brother, he ran The Link Flying School of simulator instruction in their family's warehouse. His first simulator used simple powered bellows to simulate movement, but the advent of WW2 really made Link's cockpit simulation a success. Over 10,000 of his 'Blue Box' trainers were used by the USAF during the war. The first joysticks appeared at this time. One of the earliest examples of a 2-axis joystick was part of the control system for German fly-by-wire glide bombs, precursors to the cruise missiles of today.

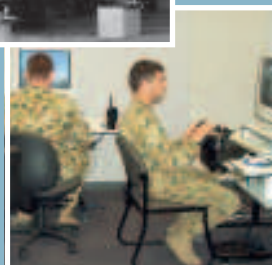
Today, military applications encouraged the first growth of simulation hardware, in turn joysticks and other peripherals such as the *TrackIR* have helped developers make ultra-realistic games and now those games are being used to train military personnel.



Games designed to replicate flight are now good enough to train pilots. Spooky.



Military personnel training using the likes of *Microsoft Flight Simulator*. What are the odds that they stop for a cheeky game of *Quake* now and again, though?



1UP-HOLSTERY

Ultimate Game Chair

Now you may be thinking this is a gimmick but read this spec list: ground effects lighting, folding dual joystick on the arms, 3D stereo surround speakers, built-in *multiple* massage settings and it's even got a beverage holder. No to mention the ports and jacks for home theatre and other peripherals, 12 motor rumble and (possibly) ejector seat simulation. We know it's horribly geeky but we want to keep this badly...

£350 www.digitalsales.co.uk/raptor.htm

PCFormat

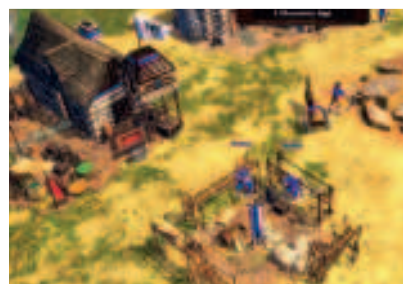
on the disc

The very best software and games

HIGHLIGHTS

Age of Empires III: The Warchiefs

The first expansion for Microsoft's beautiful RTS has more than just a touch of the *Dances With Wolves* about it. As one of three Native American tribes you'll fight for control of the Americas.



On your disc

Full programs

Our discs deliver top-quality, high-value apps and utilities. Let us know if there's something you want and we'll do our best to get it for you.

Play the best games

Don't wait hours to download this month's best games demos. They're all here, right now.

New games for old

It's not all about the latest and greatest. Every month we have a selection of the best mods and add-ons for your existing titles.

Who needs manuals?

We want you to get the most from your free programs. *PCFormat* features more software guides than any other PC magazine in the whole wide world. Sometimes.

PLAY THIS



FIFA '07

Ronaldo vs Ronaldinho as Man Utd take on Barca

Csr Keys Move
S Pass/Switch player
W Through ball
A Cross/Slide tackle
D Shoot/Pressure



Bionicle Heroes

More arcadey LEGO fun and frolics abound. With robots

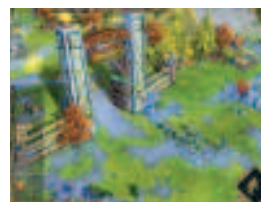
Csr Keys Move
Space Hero/Gold mode
LMB Fire
RMB Construct
MMB Change Toa mask



Fast Lane Carnage

Supercars/Nitro nonsense in this aggressive arcade racer

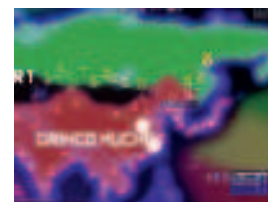
Up Accelerate
Down Brake/Reverse
L and R Steer
J Fire front
K Fire rear



Paraworld

Think *Jurassic Park* crossed with any RTS you can think of

LMB Select
RMB Action
Csr Keys Move camera
MSWheel Zoom in/out



DEFCON

Fancy a spot of mass destruction? Course you do

LMB Select
RMB Action
Csr Keys Move camera
MSWheel Zoom in/out

REGULARS

Buyer's guide

The minefield of PC hardware can be a daunting place, but fear not, our comprehensive buyer's guides make it easy.

Benchmarks

Every other day it seems like there's a new graphics card released, our independent benchmarks keep you up to date with what's hot.

Latest drivers

Getting the optimal performance out of your machine is the goal of any PC owner. Keep your rig frosty with all the latest drivers.

All the apps you need

From antivirus to spyware scanners, we've got all the apps you need to ensure the smooth running of your system.



Prepare for the dino invasion.

Get **PCFormat** delivered to your door every month...
 Subscribe now on p137

YOUR CONTACTS

In the very unlikely event that you have a problem with your disc...

DVD problems on the web: www.futurenet.co.uk/support

By email or phone: support@futurenet.co.uk, 01225 822 743

If all else fails check out our forum: forum.pcformat.co.uk

workshops

Get more from your PC today

OUR PROMISE
Every month we bring you the biggest and broadest selection of tutorials around

on
the
disc

DO THIS

Immerse yourself in a world of creativity

116 Expand your borders

Get all architecturally-minded with *Floorplan 3D* and create that extension you've been after

118 Hard and fast

Look after that hard drive and keep your rig running smoothly with *O&O Defrag V4 Pro*

119 Fusion reaction

NetObjects Fusion 8 helps you create your very own piece of cyberspace

120 Simply secure

Look after your vulnerable little PC with *Panda Internet Security*, a super streamlined suite

122 Room for a view?

Create those enormous, widescreen-gobbling panoramic images with *Serif Panorama Plus*

124 The personal touch

Let *Holiday and Events Designer* show you how to make that personalised Christmas card

127 Stay on track

Fill your MP3 collection scouring the world of internet radio and ripping it with *Radiotracker*

128 Big and clever

Keep your rig clean and streamlined with the easy to use and super intelligent *Smart PC*

116

Floorplan 3D

Ready to flash the cash on an extension to your home, but hate the thought of forking out for an architect? Get yourself designing with this powerful program



NetObjects Fusion 8

Build your own website with this powerful web design package. Whether you're scared of HTML or love it you're well catered for

Full software



Serif Panorama Plus

Want to create that perfect panoramic shot of your back yard? Get stitching those pics together with this little app

Full software



Radiotracker 3.0

If there's still a spare couple of GB on your hard drive then now you can fill it up with an eclectic array of musical magic for nada

Full Software



For a full list of everything on the disc please refer to the disc's interface. Controls for the games are listed there too.

ON THE DISC

Check out the 'on the disc' boxout in each workshop to find out what other relevant programs are waiting on the PCF disc, as well as how to install or upgrade new apps.



Design an extension to your house

Mike Channell needs to make amends for locking his Sims inside a doorless, windowless room. So he's building a sensible abode that people could live in using *FloorPlan 3D 8*, the great modelling program on the DVD

The essentials

There's a large selection of items to populate your 3D house – appliances, officeware and even pool tables to ensure it's a convincing replica of your house.

Perfect position

As you can see, the position of walls and their various adornments are measured accurately. You can decide during installation whether you want to work in centimetres or inches.

To be perfectly honest, there seems little hope of us ever extending the hovels we currently reside in. Anything that involves bricks and mortar seems to come along with the sound of air being sucked through teeth and the muttering of "that's going to cost you" from whoever's in charge. But while we are by no means sitting on pots of cash, there are some people out there who do worthy jobs and are paid handsomely for their efforts. Perhaps you are one of those people and have plans to swap swathes of your garden for an extra room or two. In which case, meet *FloorPlan 3D*, a program that helps budding architects plan building work in minute detail.

COMPLETELY FLOORED

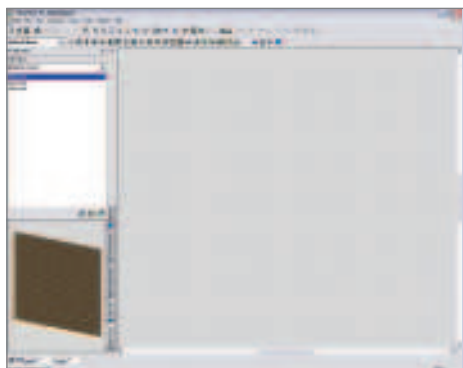
The joy of *FloorPlan 3D* is hinted at in the name. Yes folks, you've guessed it, once you've laid out your house, you can examine it in a textured 3D walkthrough mode. Should you wish to wander into your newly decorated home and promptly burst into tears a la Changing Rooms, you don't even need to worry about a smirking Llewellyn Bowen standing over your shoulder.

Design is a simple case of dragging and dropping, but rather than hamfisted scribbling, everything is measured out as you click and drag to ensure accuracy. Better yet, you can even furnish the thing with a selection of fine fittings that will ensure your finished house doesn't look like a room in a self-storage facility.

As you'd expect, the full version of *FloorPlan 3D 8* is on your disc and registration is a simple affair. Just head over to www.avanquest.co.uk/future/floorplan/register and follow the instructions to unlock your copy of the program. Do it sooner rather than later, though, because the offer expires at the end of March 2007, and you never really know when the urge to rearrange your house will strike. **PCF**

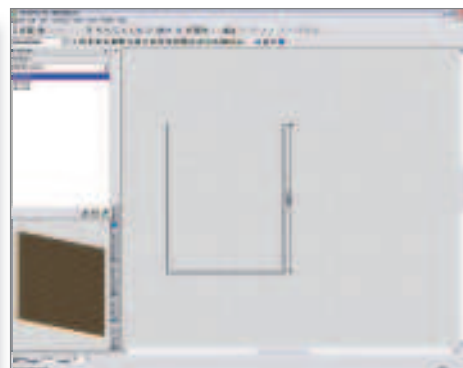
Build a beautiful abode

Let your imagination run wild...



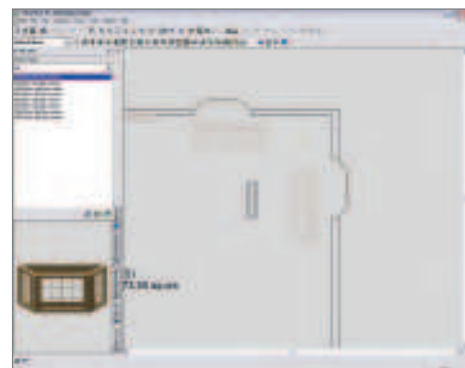
1

Once you get into *FloorPlan 3D*, you'll be presented with a daunting flat grey screen. Fear not, because there's an option to turn on a grid to ensure your house isn't skewwhiff. Click the **Grid Toggle** button (the one that's covered in tiny dots) to switch on the guidance points.



2

Drawing out your walls is a straightforward case of clicking and dragging with an eye kept on the measurements. When you start a new building, 20cm walls will be selected, but feel free to make them thinner if you're planning to build a paper shop (we kill ourselves, we really do).



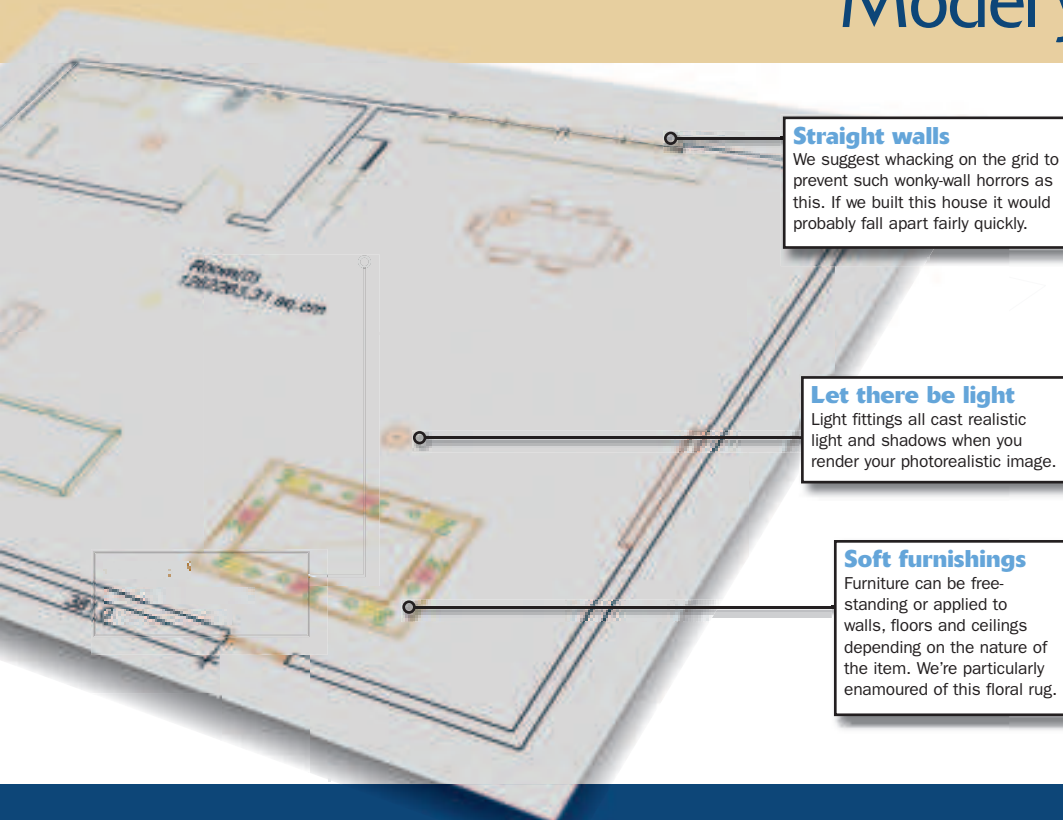
6

Decorating the house couldn't be easier, simply find the category of furnishings you need and you'll be presented with a list of plumbing, decoration and electrical equipment. There are even options to place light switches and plug sockets if you're delving into the world of wiring.

Upgrade

If you've got a massive renovation in the pipeline, you might want to upgrade to the latest version of *FloorPlan 3D*. Simply pop over to www.avanquest.co.uk/future/floorplan/offer and type in 'floor' at the checkout phase.

Model your home in 3D



Straight walls

We suggest whacking on the grid to prevent such wonky-wall horrors as this. If we built this house it would probably fall apart fairly quickly.

Let there be light

Light fittings all cast realistic light and shadows when you render your photorealistic image.

Soft furnishings

Furniture can be free-standing or applied to walls, floors and ceilings depending on the nature of the item. We're particularly enamoured of this floral rug.

ON THE DISC



FloorPlan 3D

Perfect for creating everything from extensions to whole houses. Follow our guide and the only other thing you'll need is a group of burly builders.

www.avanquest.co.uk

OpenOffice 2.0

PCF sees no reason why you should splurge vast amounts of cash on an office suite when there's a free one nestled on our DVD. It's got faithful takes on the Excel and Powerpoint concepts and accepts Microsoft Office files.

www.openoffice.org

Firefox

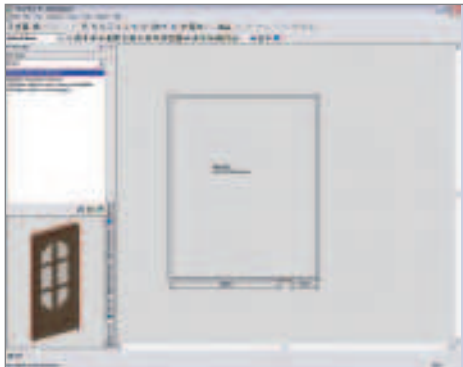
Firefox is secure, prettier and generally better than IE. Perhaps the greatest validation of Mozilla's offering is how many other browsers have copied its ideas. Just take a look at IE7 to see what we mean.

www.getfirefox.com

ZoneAlarm

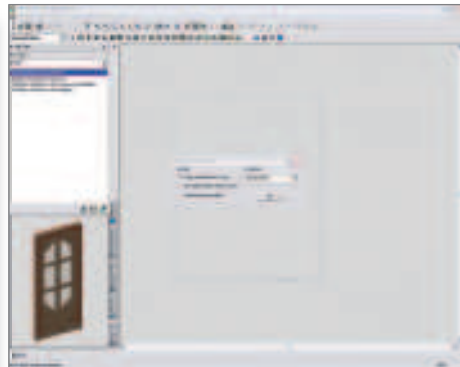
Keep the nasties out with this firewall software. Infinitely more configurable than the standard Windows effort and should ensure you have complete control over your net connection.

www.zonealarm.com



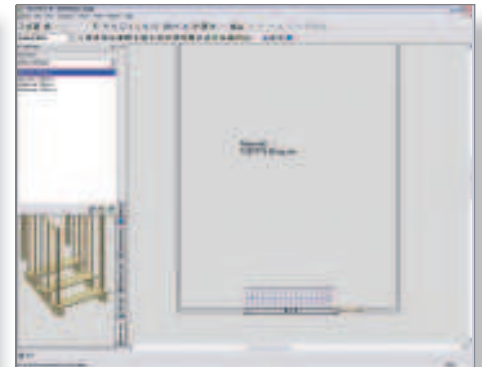
3

Now that we have walls in our one room house, we need to start thinking about access. A door would be a good start, so look up towards the toolbar and next to the currently selected wall icon, there's one that looks like a door. Click that and place a door on one of your walls.



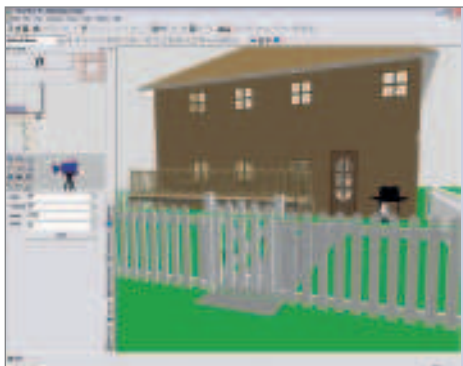
4

If you aren't content with a bungalow, you'll want to add a second floor. Select **Second Floor** from the drop down menu and you'll get the option to copy the ground floor as the basis for the upper floor. This carries your front door along with it, so click to select the door and hit **Delete**.



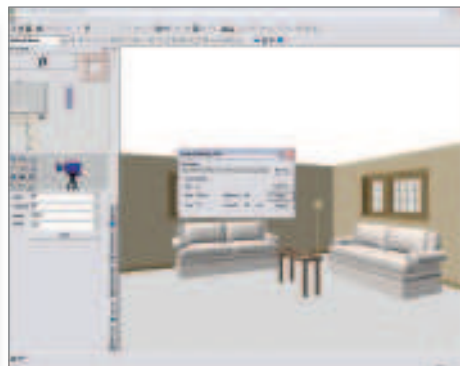
5

Now we need to connect the lower and upper levels by that most cunning of elevating inventions, the staircase. First select the **Staircase** button on the toolbar. Click and drag the same way you drew your walls, and when the staircase turns blue, you'll know it's connected.



7

With all this excitement, you might forget there's a garden, too. Placement works the same way as indoors but with picket fencing and decking. You can even place a roof on top of your highest floor. We're in 3D mode here to admire our work. It's the tab down in the bottom left corner.



8

Now that we've finished our house, we need to show it off to everyone we know. Go to **View→Photorealistic image** and then click **generate**. Under the **Modify** button set the quality to nine and the resolution to 1,024x768 or set a higher custom res. Next, click **Continue**.



9

Huzzah! We have our fancy rendering of the room in but a couple of minutes. Obviously our effort is a somewhat rudimentary taster of what **FloorPlan 3D** can do – feel free to make an inch-perfect rendering of your own home. There you go, you're the architect of your own construction.

Faster hard drives

Andrew Sutcliffe *tidies up his files with O&O Defrag V4 Professional*

Due to the mechanical and moving-parts nature of a hard drive, it's pretty much always the slowest component in your system. So, as Intel continues to set the processor benchmark with Core 2 Duo and NVIDIA and ATI bore us in the Battle of Who Can Flog More non-DX10 Cards So People Need to Upgrade When They Get Vista; and with memory being sold on megahertz and gigahertz instead of just capacity, traditional hard drives will always be the weak link. Even a system with a striped RAID array of two 10,000RPM, 16MB buffer Western Digital Raptor X drives is likely to see a bottleneck in storage, especially if all of the other components are from equally luxurious stock.

That's why it's important to look after your hard drive. And while heat may be the number one killer, a disorganised hard drive is one that has to work harder than necessary, causing the generation of unwanted heat. So what's the best way to keep those files neater than Dave's consistently immaculate desk? Treat your drive to a workout with *O&O Defrag V4 Professional*, the full version of which you'll find neatly stacked into this issue's packed DVD. You'll need to register on-line at www.oo-software.com/en/special/defrag4.

It's an incredibly powerful, yet flexible program, offering five different types of defrag and a comprehensive analysis of your drives as well. Just how often you use it is completely up to you, but those overnight BitTorrent downloads will leave your hard drive in a real mess if you're not careful. **PCF**

"A disorganised hard drive is one that has to work harder than necessary"

ON THE DISC

O&O Defrag V4 Professional

A full version of this powerful defrag app that will enable you to speed up your system, help to keep your drives cooler and get the best out of your hardware.

www.oo-software.com

SiSoftware Sandra 2005

This application enables you to gauge the performance increase in your hard drive after you've used your free version of *O&O Defrag V4 Professional*.

www.sisoftware.co.uk



Defragmentation will ensure you get the best from your hardware.

Upgrade

With your free version of O&O Defrag V4 you're eligible to upgrade to O&O Defrag V8.5 Professional Edition for Windows XP/2000/NT for the price of EUR 29.90 (saving EUR 20).
www.oo-software.com/en/special/defrag4

Get it Organised

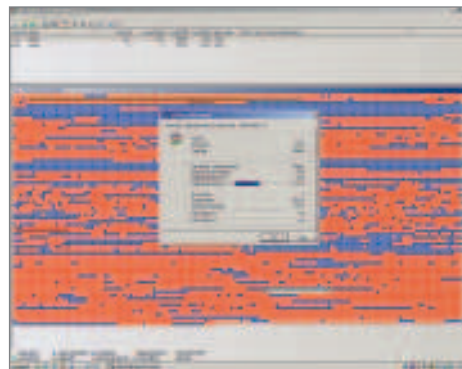
Getting the most out of *O&O Defrag V4*



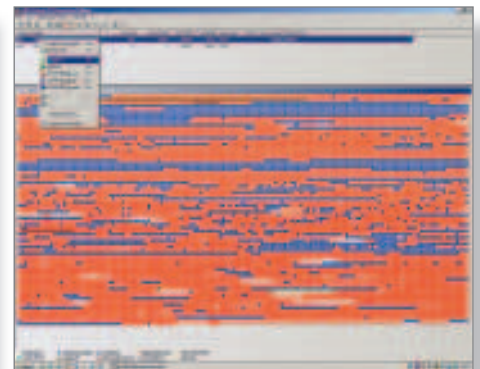
1 Once you've run the installation routine from our disc, you'll need to register to receive an activation code. You can run the program for 30 days before you need to enter the code, but you might as well pop over to www.oo-software.com/en/special/defrag4 as soon as you can.



2 On launching the app you're presented with a list of your hard drives, including some basic info about them. Get a full analysis by clicking on the drive you want to defrag and pressing **[F6]** or by **right-clicking** and selecting **Analyze Volume(s)**. It might take a couple of minutes.



3 Now decide which type of defrag to use. If your PC is a normal workstation, go for **COMPLETE/Name** or **STEALTH** if the volume has more than 100,000 files. Find this out by **right-clicking** the drive, selecting **Volume Information** then the **Status Report** tab.



4 Depending on your system and the type of defrag you selected, the defragmentation process could take quite a while. We used **Stealth** on a system with only 5% free space and it still took over an hour, giving you ample time to enjoy the simple things in life, like reading the latest *PCF*.

Object of desire

All it takes is *NetObjects Fusion 8*, Dave James and a thirst for knowledge

Everybody has something that they want to share with the world, and thanks to simple-to-use web design packages and the bundled web space you can pick up with some broadband connections, anyone can spread the love. Last month, we brought you the so-simple-your-Yorkshire-terrier-could-use-it *WebSite X5*. You could build a site in a picosecond, however, you were fairly limited when it came to the implementation of your creative desires.

SHARE AND ENJOY

If you're ready for a more fulfilling web design experience then look no further than *NetObjects Fusion 8*. This powerful, fully functioning program contains all the drag-and-drop simplicity of last month's package, but has so much more under the hood, just waiting to be discovered. It has full HTML code capabilities but, if you're unfamiliar with that language, you can completely ignore it. If you yearn to learn, however, then *Fusion*'s the perfect way to start picking it up.

The full program's sitting patiently on the disk and all it needs is a quick trip to *NetObjects'* website to register for a free serial code and the world (wide web) is your oyster. Point your browser to www.netobjects.com/future and follow the links. This workshop will help you get to grips with the basics, but the package also comes with a raft of tutorials to help you get the most out of *Fusion*. **PCF**

Upgrade

If you catch the web design bug from the contagious *Fusion 8* then simply by registering your copy you're automatically eligible for a reduced upgrade price should you desire to make the step up to *Fusion 9*.
www.netobjects.com/future

ON THE DISC

Laplink Everywhere

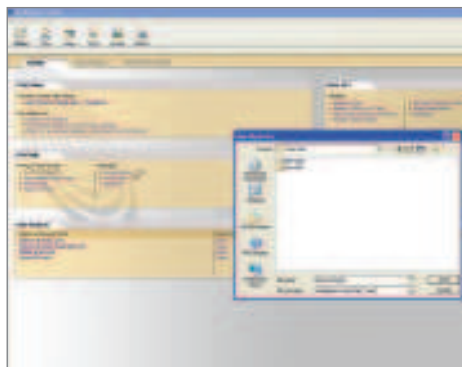
Now you've got your own website, you're going to need to constantly update it. To this end, a mobile link to the desktop hub of your burgeoning web empire is a must, and *Laplink Everywhere* provides the perfect answer.

www.laplink.com

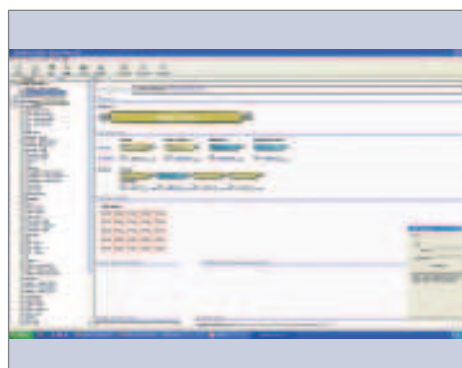
Xtivity

Give your website a bit of boost above the ordinary by creating that extra layer of interactivity with this excellent little *Flash* authoring tool. Add some great advanced graphic effects and stream movies without ever having to enter a single line of code.

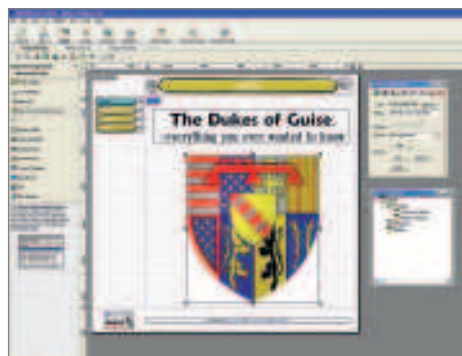
www.tivity.com



1 Starting from scratch is much more rewarding than letting the wizard create your site for you, so from the first screen choose **Blank Site** and make up a name for the save file, because *Fusion* saves constantly while you create a site. Now you can add pages to your site with the **New Page** button.



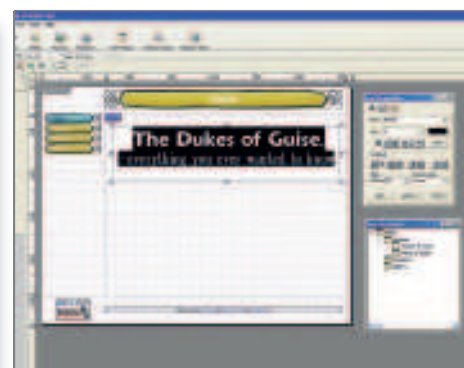
3 To select the background and menu style of your website, click on the **Style** button in the top toolbar. From here you can preview and select the style of your site; double-click on a particular arrangement to select it. There are a host of styles installed with the program, as well as others that are available online.



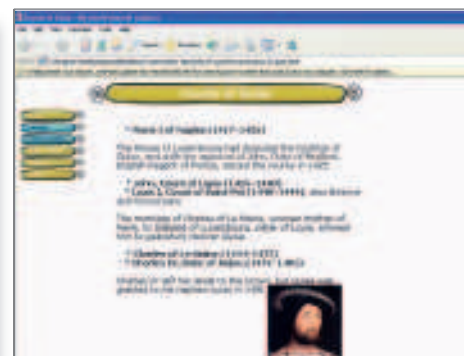
5 Adding a picture requires much the same process as adding text. Select the **Picture** button and drag a box into the approximate area you want the picture displayed. Don't worry too much about accuracy as you can resize and move it later. Choose an image from your library and you're ready to roll.



2 If you want to add screens coming from pages other than **Home**, simply select the desired root and use the **New Page** button as normal. Changing the **Page Title** in the **Properties** box will add the name into the title bar of your browser. By double-clicking on a page name you can change it quickly.



4 Go back to the **Site** screen and double-click on the homepage to take you to its layout. You'll see your selected style set out in the **Master Border** around the edge of your page. To add text to it, select the **Text** button and drag a text box on to the screen and format it to your liking in **Text Properties** box.



6 Going back to the **Site** button enables you to jump to and edit any page, as you did the home page, by simply double-clicking on it. The **Preview Site** button along the top bar enables you to check out how your site functions in your default browser, so you're able to bug check as you go along.

Panda Internet Security

Al Bickham gets to grips with Panda's latest virus-zapper

Ah, the Internet. That great repository of all things good and bad. A meeting place of millions, and a breeding ground for digitally engineered nasties, created by empathy-deficient, antisocial bucketheads. What a place.

The whole sorry situation isn't helped by the fact that Windows XP and Internet Explorer are about as effective at shielding you from infection as a one-ply tissue in an Ebola quarantine zone. This, of course, is where antivirus apps come into play, and we like few as much as *Panda IS*.

KEEP IT SIMPLE

For starters, *Panda* is a sweet and streamlined piece of antivirus software. Unlike the larger, more established – and often ungainly – suites, it doesn't poke its nodes into every cranny of your system and double your boot times, or throw pop-up after mindless, invasive pop-up at you. You hardly know it's there most of the time, and that's the way it should be with a piece of necessary, functional software.

It's also about as intuitive as a piece of software can be. The main screen doesn't baffle you with endless options; it features an automatic firewall which stays largely silent, and options to alter the level of depth to which virus scans can be performed. Instant updates are a cinch, and the optional email scanner lends confidence. All in all, we reckon it's a winner. **PCF**

Panda IS has learned PCF's golden rule for all antivirus apps – Don't Be Irritating – and sticks to it admirably.



"Panda is a sweet and streamlined piece of software"

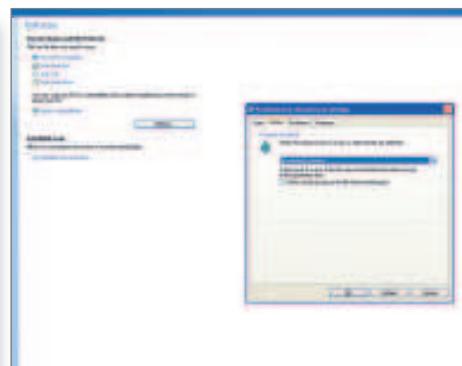
Getting started

Make viruses an endangered species with *Panda*



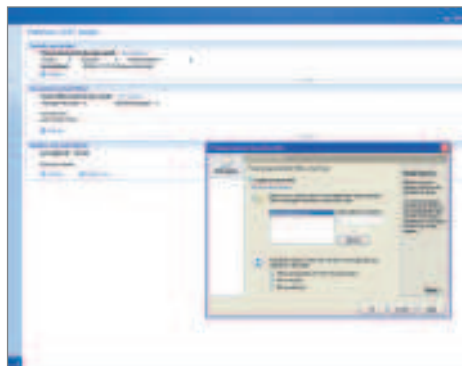
1

The first step after installing *Panda Internet Security* is to update every part of the package. This is hassle-free, as clicking the update function on the main program hub updates all aspects of the program at once, including virus definitions and program functionality.



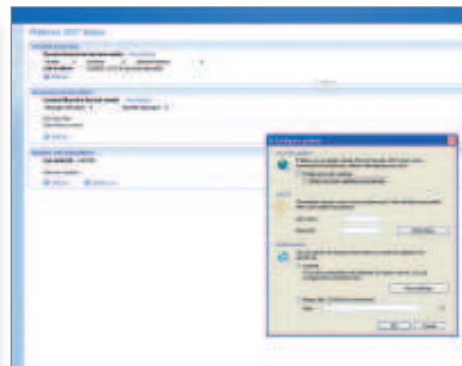
2

Next, perform a scan. Tweak the settings to scan the things you want to, so click the **Scan** button, followed by the **Settings**. Under **Actions**, you can set the action you want the PC to take if it finds any viruses – the safest is **Disinfect The File**, as it won't destroy infected files.



3

Panda's email scanner is also capable of ignoring certain email addresses and domains, so you can save CPU cycles and memory by avoiding unnecessary scans. Click **Settings** under **Content Filtering**, and add any email addresses you want to include in the non-scan list.



4

Finally, auto-updating is the way forward. By default, the program is set to notify you when downloading updates, but you may wish to turn this off (in Update Settings, natch) if you don't want to be hassled while you're off pwning Azeroth. And who would?

ON THE DISC

AVG

An application so unassuming that, you'll forget it's installed at all, AVG has been the PCFormat virus-shunner of choice since Adam was literally a lad. *Panda IS* is without doubt a worthy successor, and that's praise indeed. www.avgvirusfree.com

Commodo Firewall

Named after a notoriously testy species of giant lizard, Commodo will keep your beloved system out of the reach of nefarious keyloggers and their disreputable ilk, without disrupting your PC usage unnecessarily. Sounds like a great idea to us. www.commodo.com

Alec Meer mourns the untimely death of the handy camera eyepiece

So, I bought a new camera a while back. It was a pocket-sized snapper designed to accompany, rather than replace, my aged but trustworthy Nikon 5700 – I didn't expect greatness. But I did expect an eyepiece. In fact, I didn't even think to check whether it had one or not before I bought it. Having left all the camera reviews to Adam during my tenure on PCF, I haven't spent enough time with recent models to have realised that the eyepiece is a dying breed. So I was gutted when my Canon IXUS iZoom turned up with only its rather pokey LCD screen as a framing guide.

HAVE AN EYE OUT

Unfortunately, just weeks later, the motor in my Nikon's lens went belly up, and it's such an old camera that the cost of repairing it simply isn't worthwhile. Since, I've come to rely on the Canon and its preview screen. Because of that, I've become an even worse photographer than I was before. The eyepiece was the only thing that made me attempt to compose a shot well, so now my laziness has won. There's a big psychological difference when using the screen – because I treat it as a computer screen rather than a final result. I can already see when taking the shot what bits I'm going to crop out later, which bits of over-brightened sky I'm going to mess with the contrast of... The eyepiece was the last thing that made me treat a digital camera like a film camera. I'm afraid that with its loss also goes my last scraps of photographic artistry. Bah.



The IXUS iZoom – the camera that made Alec even lazier.

Have your say forum.pcformat.co.uk

“In an age of widescreen films and games, it's odd that cameras remain 4:3”



Widescreen images

Alec Meer stitches his snaps into wonderful wallpaper for a widescreen monitor

Remember APS cameras? Y'know, that short-lived, cartridge-based alternative to 35mm film rolls that was essentially killed off by digital photography before it had really earned its keep. Well, a footnote in camera history it may be, but it did have the option to take widescreen, panoramic photos that looked just awesome – in a low resolution, horribly expensive to print kind of way, anyway.

In the age of widescreen films, games, TVs and monitors, it's odd that cameras remain resolutely 4:3. Unless you use aggressive cropping, how do you turn your holiday snaps into wallpaper for that expensive widescreen Dell monitor you just bought?

PanoramaPlus just might be the answer. It'll scan multiple photos for matching attributes, and then attempt to glue them into one larger image if they match sufficiently. Though making widescreen imagery is the most obvious use, it doesn't only check images horizontally – your stack of pictures of Saruman's Tower could be glued into one giant, vertical pillar of a photo, as could a diagonally taken sequence of vultures in flight. Although the results can be quite astonishing, it's worth forewarning you that more often than not, *PanoramaPlus* won't be able to find enough similarities in just a couple of

images. So, take shots with a steady hand, in similar lighting, with overlapping elements and in large quantities to increase the success rate.

A complete, unrestricted version of *Serif PanoramaPlus 1* resides on this month's cover DVD. It does require telephone registration to stop it time-bombing though – you'll find the number on the disc interface when you install the program. Happy stitching... **PCF**

ON THE DISC

IrfanView

This is an excellent freeware image viewer and basic editor. It's also good for taking screenshots of games, as many a PCF reviewer has discovered to their tightfisted joy. www.irfanview.com

The GIMP

Almost as powerful as *Adobe Photoshop*, and it's entirely free. The interface may leave a little to be desired, but hey, mastering it something to be proud

of. Kind of like riding a unicycle, but with more cropping. www.gimp.org

Visipics Image Editor

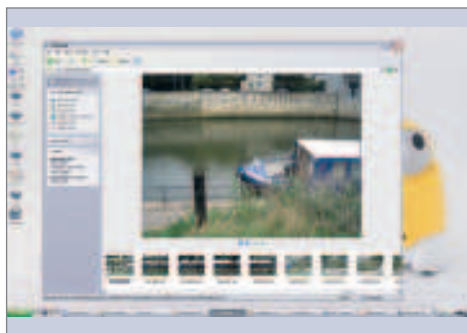
Another photo viewer and image optimiser, popular app *Visipics* will organise your shots and arrange them in a slideshow in just a few clicks. You can even send your favourite pics to friends directly from within the application. www.visipics.com



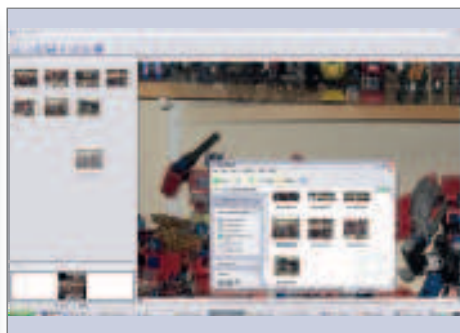


Stitch this

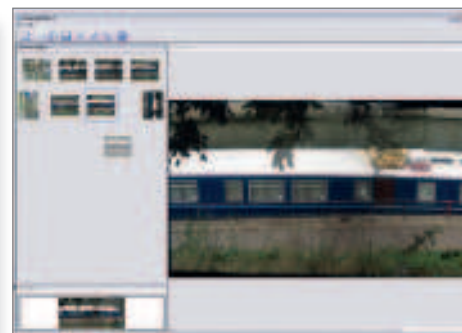
Combining disparate wobbly handed pics into a widescreen vista



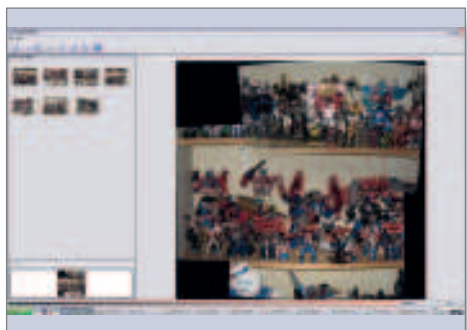
1 Though powerful, we wouldn't advise trusting *PanoramaPlus* with your grandma's life. Its machine-brain means photos that look like a perfect fit to your simple eyes are chalk and cheese to it. So take a lot of photos because most of them will be considered un stitchable.



2 The next step is to fire up the program and import the photos you want to make widescreen. You can do this by going through File > Import, or just dragging and dropping the pics from an Explorer window into the **Source Images** pane of *PanoramaPlus*.



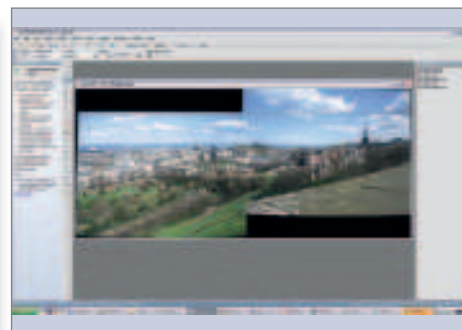
3 Though the program gives each picture a thorough scour for its attributes, you can drag them into a different order to give it a helping hand. You can rotate them if they're straight off a memory card and you haven't reoriented a portrait shot to face the right way up already.



4 With order and angles settled upon, all that remains is to click the **Create Panorama** button (it's the one that looks like a bogroll), then wait. Wait some more. The more photos, the more time, of course. If you're given a 'No Matching Attributes' message, it's game over.



5 If you're lucky, you'll be given a single image comprised of any of the original pics *PanoramaPlus* thinks match each other. Don't worry if there's what looks like missing bits of the picture – this is where two close-ish photos haven't been a perfect fit, so a gap's been left.



6 Hitting **Export** in *PanoramaPlus* will save the collage in a format of your choice. Your best bet is to load up your preferred image editor and crop the photo so the messy edges are gone. You can use tools such as the Clone brush to remove any ghosting where the pics overlapped.

Design Christmas cards

James De Vile adds that personal touch with *Holiday & Events Designer*



PCF gets lots of cards at Christmas, but it's always the hand-crafted variety that remain teetering on top of our monitors far into the new year. You see, we hold the opinion that a handmade creation shows more care and thought than the usual two words written on a card from a bulk box. As such, if you're planning to send us notice of jubilation this year, the only alternative to breaking out the Pritt Stick and glitter we'll accept is the use of this tidy little application. You'll find the full version on the cover disc; register your details at www.bluesquad.co.uk/future/holidayandevents/register to receive a free serial number. **PCF**



Upgrade

BlueSquad are offering a discount to PCFormat readers. Visit the website below and enter the code BSQ-ALL to claim 10% off any of their products.
www.bluesquad.co.uk/future/products/offer

View Back

Remember to fill in your message on the inside of the card. We've written it on the back in this example, but you'll want to place it on the inside so that it prints ready to fold.

Insert ClipArt

Use this menu to browse for and insert any images into your card.

Rotate

To further customise your card, you can rotate text and images you drop in. This can be to any positive angle, so if you're looking to rotate a photo anticlockwise 10 degrees you'll need to enter 350 degrees in the box.

Background Designs

If you're stuck for ideas, you can use this menu to instantly fill the card with snowmen and other Christmas paraphernalia.

Text Art

You can manipulate your card's text into all shapes and colours. Here, we've used an arch shape, so as not to chop off the top of our Christmas tree. We've also added a drop shadow to help the text stand out.

Mail Merge

One of the most powerful tools in the program is its Mail Merge system; this draws on data in your Windows Address Book to instantly personalise each card and envelope with the recipient's name and address.



Immaculate Conception

Make the kind of cards you'll be proud to send...

ON THE DISC

The GIMP

Standing for GNU Image Manipulation Program, GIMP is a free app designed for retouching photos, composite image-making and other assorted picture wrangling tasks.
www.gimp.org

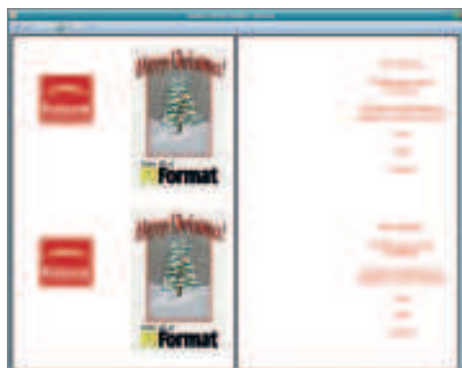
VisiPics

This simple program is perfect for those with a bloated photo library. It searches your hard drive for duplicated pictures and presents them side by side so you can

quickly decide which to keep and which to purge.
foxie.griffix.info/visipics

Digital Camera Enhancer

DCE takes your dodgy photographs and does all the necessary touching up that they may require. It's also perfect for smoothing skin in extreme closeups and for fixing pictures taken in poor lighting conditions.
www.mediachance.com



1

Printing double-sided cards requires a degree of paper-juggling, so you may find it easier to remove all but a single sheet of paper from your printer. Set the program to print page one only, and once that's done, give the sheet a shake and place it straight back in your printer tray.

2

Now tell the program to print page two. If all's gone to plan, you'll have two Christmas cards ready to fold and send. You can use *Holiday & Events Designer* to create personalised envelopes, too. Insert the envelopes into your printer with the flap side facing upwards.



Radio Ga Ga

Dave James turns his ear to web radio, and rips it with *Radiotracker 3.0*

With the ever increasing popularity of MP3 players, and the swelling storage capacities of your average home PC, most people now possess an inordinate amount of music on their hard drives. Still, that doesn't really help when you're as hopelessly indecisive as we are. Internet radio is great for that exact character flaw, dishing out hours of music catering for whatever niche genre you're feeling predisposed to at that particular point in time.

You will find, however, that these stations end up playing tracks you love for that fleeting moment they are bounding out of your speakers but then are lost forever to the ether. Unless you manage to leap up and write down the track title you may never find that particular tune again and will be forever doomed to bug record shop staff with "...it kind of goes doo, doo, deee, manahh, blurpy, beep."

RIGHT ON TRACK

This is where the marvellous Radiotracker 3.0 steps in like an errant knight with a radio antennae strapped to his helmet. It has a directory of over 14,000 radio broadcasters and can simultaneously rip music from multiple stations. Where it comes into its own against standard recording software such as Audacity is in the way it actually records the tracks. Once the individual track is ripped, the program then finalises the recording by searching the internet for the track information, like title, artist, album and artwork. The standard version is waiting for you on the disk, enabling you to rip directly from three stations at the same time. **PCF**

"Once the track is ripped the program then finalises the recording"



Picture Corbis

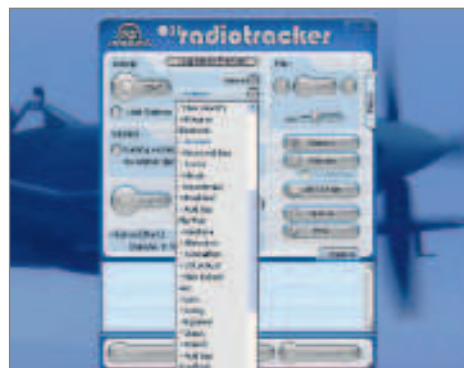
Radiotracker 3.0 can rip music from multiple stations.

Upgrade

If you find yourself falling in love with this particular little app, you may want to upgrade to the feature-packed Platinum edition. You'll find we've arranged a 30% discount for you lucky readers – take a trip to www.radiotracker.com/pcformat

Boost your music

...without all that wholly unnecessary effort



1 The Autorip function is perfect if you're not that fussy and just want to rip any stations Radiotracker selects from a particular genre, or from your selected favourites. All you've got to do is select which genre you want to rip from in the handy drop-down menu and click the **Start** button.



2 Leaving it running for any length of time can seriously eat into your storage capacity so the Job section is a vital tool. It enables you to select a cut-off point relating to either time or amount of data. Tick the **Job box**, select **Data or Time** from the menu and choose your parameters.



3 You can listen live to any of the stations currently recording by clicking the **Live button**. From here you can alter the volume and switch between stations, and none of this affects the recording of the individual tracks. You can then access the tracks through the **MP3 Folder button**.



4 If you're more choosy, you can opt to select the specific stations to record from, even by inputting the individual URL if the station isn't listed in Radiotracker's comprehensive database. You can also ban or favour particular stations for use with the Autorip function.

ON THE DISC

MediaJoin

If you've got clips you want joined together then this little app is for you. Not only does it paste together audio/visual files, but it works with .txt files too. camtech2000.net/Pages/MediaJoin.html

musikCube

Tired of the unwieldy nature of iTunes? Grab yourself a copy of musikCube and sort out your media library. It learns what tunes you listen to and creates playlists automatically. www.musikcube.com/

Smarty pants

As his PC grinds to a halt, Dave James brings *Smart PC* to the rescue

Smart PC gives you the tools to delay the almost inevitable moment of OS re-installation that comes to us all eventually; you know even Vista will be susceptible. Shoring up broken registry files, missing shortcuts and duplicated files will help speed up your system and keep things running sweet. Register this handy little app at www.bluesquad.co.uk/future/smartpc/register by May 2007 for your free serial code.

A Our first port of call is the registry. Over time it'll get jammed up with all sorts of crap, and Smart PC will clean that out. You're offered a checklist of things to scan, such as font files and uninstall entries, and once you've selected what to purge it'll do all the hard work for you.

Smart PC also has an invaluable tool which scans for broken shortcuts and removes or re-links them as necessary.

B Should you wish to cover your tracks online for whatever reason, we're not judging here, you can opt to wipe your internet tracks. Simply check the relevant boxes, such as document history and internet cache, and no-one will ever know your secret obsession.

All PCs will generate junk files over time and while some can be fairly innocuous, just taking up the odd KB here and there, some can cause untold problems and crashes. By selecting to remove both junk files and duplicate files you can streamline your system, and all it takes is a simple scan.

C By tweaking a few of the less obvious features in Windows with the 'Optimize' section you can eke out a bit of extra speed here and there. We managed to knock around five seconds off our XP boot time with a few simple mouse clicks. Each check box on the 'System', 'Internet' and 'Media' tabs is accompanied by a short description and recommended setting to make things easier. **PCF**

Smart PC will take a peek at all your manifold computing woes, and fix them at a stroke.



Upgrade

You can get £10 off the latest version of Smart PC. All you've got to do is visit www.bluesquad.co.uk/future/smartpc/offer and enter the promotional code SMART. www.bluesquad.co.uk/future/smartpc/offer

"By tweaking XP's less obvious features, you can reduce boot times"



Quick step

Create your own clean-up operations

ON THE DISC

Bootskin

It's all very well having a ninja rig with all the flashy lights and neon tubing, but if you're still running the standard XP loading screen no-one will take you seriously. *Bootskin* allows you to safely change the boot screen without any worrying kernel bashing.

XP Syspad

Should you need to reinstall your copy of Windows you may panic at the thought of trying to track down a product key. *Syspad* tracks down product keys installed on your system allowing the recovery of your OS and Office programs if necessary.



1 Smart PC comes with a set of three Quick schemes, so you can optimise your machine with two clicks. Selecting either the **Quick**, **Normal**, or **Full** modes, takes you to a screen where you can check which processes to set in motion.



2 You can set up your own default options for the three modes in the **General preferences** box in **Options**. Again, it's simply a matter of ticking your chosen boxes and saving the results. These options will then replace the previous settings as you see fit.

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Ask Luis...

ALL YOUR PC QUESTIONS ANSWERED

Pub Quiz

Grab a pint and ponder over these



- 1 What does MTU stand for in networking?**
 - a) Maximum Transmit Unit
 - b) Minimum Transmit Unit
 - c) Message Transfer Unit
 - d) Maximum Termination Unit
- 2 What is the default MTU value for Ethernet networks?**
 - a) 1,500 bytes
 - b) 1,500 bits
 - c) 2,700 bytes
 - d) 2,700 bits
- 3 When should this value be changed?**
 - a) Only if your ISP specifically advises you to
 - b) Never
 - c) Whenever your network seems slow
 - d) If your modem keeps disconnecting
- 4 What happens if your MTU is set higher than your ISPs?**
 - a) Data packets need to be split into two when sending
 - b) Data packets need to be combined before sending
 - c) You cannot connect
 - d) Nothing
- 5 How do you change your MTU setting?**
 - a) Right-click the network connection and select Properties
 - b) Use the configuration screen for your router
 - c) Open the Network applet in Control Panel
 - d) Contact your ISP

Answers on page 133

Free technical support

Got a problem with your PC? Write to Luis, or better still drop him an email. Assuming you can get your PC to work, that is...

pcfhelp@futurenet.co.uk
PCF Helpline, 30 Monmouth Street
Bath, BA1 2BW

Here to help

Perched atop his throne made from the bones of those who dared to question him, Luis Villazon accepts politely worded queries that are accompanied by a suitable cash bribe

Solitaire: just save it for the afterlife, will you?



OS GLITCHES Solitary confinement

Q I have an error message that comes up each time I try to go on to Solitaire.

The message reads "sol has caused an error in krnl386.exe. Sol will now close." Can you tell me how to correct this? I've tried all I can think of but nothing works.

SNOPPER
snooper@talktalk.net

A Solitaire? *Solitaire?* Sol-i-taire? What are you doing? Do you realise that this life is all you get? I mean, do you really, *really* realise that? It is my contention that no one can have truly comprehended their own mortality if they spend any of their precious remaining minutes flipping digital cards around in a game where the result is *already determined* the moment the deck is shuffled. If there's an afterlife, then you can play your Solitaire there. If there isn't, then I strongly suggest that you

user account, so it boots straight to desktop, I now have the user menu. Must I uninstall this program in order for my machine to be as it was or do you know a better way?

Mikdun@eircom.net

value your free time more highly than to spend it playing the free game that was first bundled with Windows 3.0.

Sol.exe is probably causing kernel exceptions because the file is corrupted. God, in His Infinite Mercy decided to spare you this Earthly Torment and smote Solitaire asunder. You could defy Him by extracting the original file from the .cab files on the Windows installation CD (or just reinstall Windows on top of your current copy). But really, is that wise?

OS TWEAKS Netframework Blues

Q Having installed Microsoft.Net Framework 2.0 on to my PC with no

A No, it's no good. I've read that four times and I still don't know what you mean. Let me have a go at rewriting it: My PC used to boot straight to the desktop without me needing to log in but since I installed the .Net framework, I have to click my username.

Now, I have no real idea if this is the question you meant to write, but since yours makes no sense and mine does, I'm going with that. Open **Control Panel→User Accounts→Change the way users log on**. Clear both check boxes and you're done.

MOTHERBOARD Boot failure I

Q I recently bought a PC from Cyberpower UK. It has been running fine up

until now, but when I last tried to boot, it got up to the Windows XP load screen and then the screen went black. I turned off the computer and tried to boot it again but to no avail. I unplugged everything from the back of the computer, plugged it all back in and tried to boot. This time, the lights flashed on for about a second and then the PC died. Now it won't start at all. Please could you help me as I am desperate to get it working again.

RIDLEY
wern.mill@virgin.net

A Don't hold your breath. A PC that boots to the XP loading screen and then blanks could simply have a graphics driver that won't let it select high-resolution mode. But a PC that just slyly winks its LEDs at you and then quits is all kinds of busted. If you aren't even getting a beep error code from the BIOS then the PSU is cutting out as soon as the load builds past a certain threshold. You can check the PSU by taking out every drive and non-essential component and trying again. If it gets further in the boot process, then the PSU is the failing component. If it still fails at the sly wink stage then it might still be the PSU but you have to consider the more serious possibility that the motherboard or CPU blew at the point where the PC first halted.

Whether or not any of this is any concern to you depends very much on what you mean by "recently". If recently means more than a year ago then a) you have a much more compressed sense of time than me and b) you need to buy some new hardware. I'd start with the PSU as

it's much easier to install. But if recently means inside of 12 months, including the time you wasted writing to me and waiting for one of my typically pointless and rambling replies, then for goodness sake, claim on your manufacturer's warranty – that's what it is there for.

MOTHERBOARD Boot failure II

Q I've been given a PC to repair. It has a pretty odd problem, I built it myself years ago and had no problems with it, but since I've sold it on it's gone pear-shaped. To be precise, it just won't start (all the time).

Once the power button is pushed, the CPU fan spins up, the PSU fan spins up but nothing else happens. The hard drive fails to start and the optical drive fails to respond too. But this only happens 96% of the time or so. The motherboard in question is a Jetway 867AS rev 1.0.

I only ask for help as a last resort. So far I've tried removing the Power On switch from the jumpers on the motherboard and shorting the contacts directly with a jumper from the back of an optical drive (and a screwdriver). I've also tried installing a new power supply, new IDE cables, a new memory module, booting without the optical drive, without the hard drive, with the optical but no hard drive and no drives whatsoever. Since this motherboard is out of warranty I've also re-soldered the connections on the motherboard connector for the power supply.

I think that's a pretty exhaustive list, but obviously not complete as I haven't fixed it yet. I'm not keen on BIOS upgrades as

I've lost a bit of hardware to those in the past. I only mention the motherboard because it seems the most likely culprit in my view.

You're going to tell me to chuck it in the bin, aren't you?

KEVIN
munkifrog@hotmail.com

A Let's go back to your symptoms. The CPU fan is spinning so we know that the 5-volt rail is live. If the hard disk and optical drive aren't even spinning up then the 12-volt rail must be dead. The drives take their power directly from the PSU, not from the motherboard so the fault ought to lie there. But you've already replaced the PSU once, so either you're amazingly unlucky or something else is hexing the power. And after thinking about it long and hard, the only something else that I can plausibly come up with is the motherboard.

So, yes, chuck it in the bin. Alternatively, you could try installing the PSU in a PC that you know boots up OK, it amounts to the same thing. But it's just delaying the inevitable. Either the PSU will work just fine in the other PC and you'll conclude that the motherboard in this one is broken and needs replacing, or it won't work in the other PC and you'll conclude that the motherboard is broken in such a way as to destroy any PSU plugged into it and you'll need to replace both.

RAM Failing memory

Q Why does my PC only recognise one strip of memory when it restarts?

COURTNEY
court_prince@hotmail.com

A That'll be because the other strip is broken.

MOTHERBOARD Boot failure III

Q I'm confused! I know a bit about PCs but I have never come across this before. First, I had a problem with my reset switch as I needed to hold this in for my PC to start, as soon as I release the button it switches off. Not sure what I did but this is now fixed, but now the power comes on and nothing happens. All fans are working and there is power – the CD drives both open and close. But nothing else happens – no monitor, keyboard, mouse,

FAQ

Tactile Passwords



This special mouse will put a stop to shoulder surfing.

What's wrong with ordinary passwords?

The traditional text password can be broken in two main ways. Either you choose something that's easy to guess, or someone simply looks over your shoulder.

What is a tactile password?

You use a mouse that has two grids, each of 16-pins, one under each mouse button. You rest your fingers on the buttons and the pins move up and down to form specific patterns. Each pattern corresponds to a character of your password. To select a character, you move your mouse over a grid of squares on the screen. As the pointer passes over each square, the pin-grids move to the configuration for one of the characters. When you feel the pattern that corresponds to the next character in your password, you click the square.

Is this more secure?

Yes – you can't be overlooked because the moving pins are underneath your fingertips. Also, because the tactile patterns don't have any real-word representation, they aren't guessable.

Doesn't that make them easy to forget?

It seems not. Touch is a more primitive sense and we humans seem to remember abstract tactile patterns much better than random sequences of letters and numbers.

Read more at:
www.qub.ac.uk

Bedside table

This month, Luis is reading...

Absolute Beginner's Guide to Security, Spam, Spyware & Viruses

Author Andy Walker Publisher Que Price £16 ISBN 0-7897-3459-1

Like all *Absolute Beginners* books, to get to the actual information, you are forced to wade through the distracting puns in the section titles, caricatured photos of boffins on every tip and a verbose, chatty writing style that exists merely to pad the book to a respectable size. The relentless ho-ho style is exhausting to read straight through and makes the book almost useless as a reference guide. Install an AV program and spam filter, update Windows, don't open email attachments. Yada yada yada.



A: drive... I've checked all connections and everything is fine. Recently I had to change my power supply as my old one blew up and I installed a new wireless router – that's all I've done and this would not make a difference as it was working fine before.

If you leave the PC disconnected from the mains for a while then reconnect it something happens and it boots up but then it freezes, it doesn't even get to the hard disk boot stage.

KALPESH PANKHANIA

kalpesh_pankhania@hotmail.com

A Yet another vaguely-power-related, refusing-to-boot problem – this is turning into something of a leitmotif for the month. You say you're not sure what you did to fix the original problem –

my strong suspicion is that you didn't fix it at all. It just went away temporarily because it's an intermittent fault. Your current symptoms are almost certainly caused by the motherboard not asserting the power good signal, as a result the CPU gets locked in reset mode.

Without the original set of symptoms, I might be inclined to suggest that the PSU was at fault for not supplying a stable voltage. However, the first problem was probably related to the power good signal as well, so I'm calling the motherboard here. It's possible that when the original power supply blew it fried the motherboard as well. Possible but academic. I don't think we need to wait for a full autopsy; I'm going to record "death by misadventure" for the motherboard

and leave it at that. Go on – go out and buy a new one.

COMMUNICATIONS Bluetooth pairing

Q I have a Sony Ericsson W550i phone on which I browse. I would like to know how to use the phone's internet connection to browse on my laptop via Bluetooth. Don't laugh at me, decent web connections are expensive where I live – in Nigeria. I have tried connecting to the phone's NAP service (Network Access Point) but it disconnects immediately after connecting with this error message: "There has been a security error. You may have to redo pairing."

OLAWALE SANNI

waleesa@yahoo.com

A Bluetooth pairing is an authentication system that enables your laptop to trust unsolicited connection requests from your phone and vice versa. Normally, the PC generates a

toilet reading that much more enjoyable. The rest of the content is great, but I really need more Luis. Ever since the demise of Rab C Nesbitt, Luis has been my source of sarcasm. I think I may also need professional help.

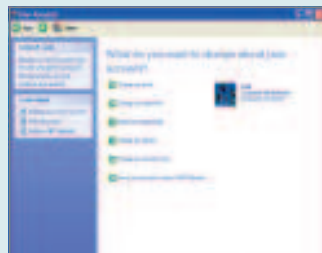
PHILLIP MARSDEN

flipsidefil@blueyonder.co.uk

A Nonsense. Giving me my own magazine is an eminently sensible suggestion and one that is surely long overdue. Thinking about it, it seems wise that we extend the brand to include a podcast, TV show and high-energy sports drink as well. I think the key thing here would be to maximise the amount of exposure and (more importantly) money that I get, without significantly increasing the work involved.

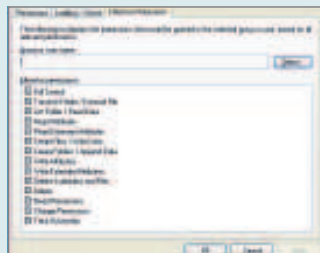
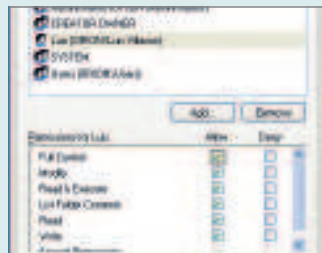
Perhaps I could hold monthly bring-your-busted-PC-round-to-my-house-and-I'll-make-very-rude-comments-in-person sessions. Then a beautiful and scantily-clad secretary would write down all my bons mots and I could spend the

Taking ownership of a file Whose hard disk is it anyway?



1 NTFS restrictions
If XP gives an access denied error when you're trying to open or modify a file, it may be that the file permissions are set up to restrict you. If you have admin access to the PC, you can override this and reset the permissions to give you control. Note that this only applies to NTFS formatted disks.

2 Enable the Security tab
To access the security settings, you need to disable **Simple File Sharing**. Open **My Computer**, click **Tools→Folder Options→View** and clear the **Use Simple File Sharing** (recommended) box. This is only possible in XP Professional. If you have XP Home, you'll need to restart in Safe Mode.



3 Change Permissions
Right-click the file that you want to take ownership of, and then click **Properties→Security**. Click **OK** to the security message, if you get one, then click **Advanced→Owner**. In the Name list, click your **user name** (Administrator if you are logged in as Administrator) or click the **Administrators group**.

4 Gotchas
Usually, you will just want to tick the **Allow box** for Full Control. Be careful with the Deny column. Deny rights take precedence over Allow rights and you can lock even the Administrator out of a file that way. Click **Advanced→Effective Permissions** to check the effect of your change before you hit **OK**.

"It might rip a whole in your region of space time, collapsing your reality to a mini black hole"

numeric code and you key it into the phone to confirm that you want the two devices to communicate. Sometimes the authentication goes the other way as well. Either you typed the number in wrong or it's become corrupted. To redo pairing, go to the Bluetooth settings section of your phone's menu and delete your laptop from the list of paired devices. Then, with Bluetooth activated on both your phone and laptop, the pairing wizard should restart automatically.

Oh, and ha ha ha. You should know that no one tells me who I can or can't laugh at.

BRILLIANT IDEAS Not before time

When can we expect to see an "Ask Luis" special, or for that matter, an entire separate magazine or pullout? The first thing I do when I get **PCFormat** is head straight to the "Ask Luis" section to see what dumbass questions have been sent in. Hasn't anyone heard of Google or Support Forums? It really is about time we had a few pages more to make

rest of the month playing World of Warcraft. It's a guaranteed formula for success! Adam? Are you getting all of this?

KEYBOARD Stuck shift

Q I have a recurring problem with my PC... at least I think it's the PC. A few weeks ago, my keyboard was acting up. I was typing capital letters and if I put on the Caps Lock, I got small letters. Also I couldn't type in any numbers. After shutting down and restarting about three times, the problem stopped. Now two weeks later, problem is still persisting. I tried using the virtual keyboard and got the same results. Is it my keyboard that is the problem or would it be my PC?

LYNN NICHOLLS

lynn.nicholls@rbc.com

A Let's get back to basics – the keyboard is *part* of the PC, you silly moo. But anyway, I think all you've done is enable the Shift Lock state. Most keyboards have a keystroke combination – Ctrl + Caps Lock or

Ctrl + Shift + Caps Lock, something like that – that will cause the keyboard to behave as if Shift is permanently held down. This isn't quite the same as just pressing Caps Lock because it also toggles the shift state on the number and symbol keys. You can undo this quite easily by just hitting the same keystroke combination that you used to enable it in the first place. Trouble is, most people discover it by accident like you did and they can't remember what they pressed. Random button mashing is your friend in this situation. Play with the combinations of Ctrl, Alt, Shift and Caps Lock and you're sure to get there eventually.

HARD DISK Missing space

Q I'm running Windows XP and have been presented with a problem in that my C: drive reports that it has a used capacity of 17.5Gb out of a total of 20Gb. This is a problem with defragmenting as Windows requires more space to defragment.

When interrogating all of the directories/folders, they are shown to collectively take up only 10.2Gb of space. What do you think might be causing this problem? Your possible assistance would be immensely appreciated.

PETER SMIT
petes@absamail.co.za

A It's always best to wait until you hear what my assistance is before you thank me for it. In essence, yours is an irrelevant question about a trivial problem that is preventing you from running a pointless utility. Your hard disk is full because it is small; 20Gb is pocket change these days. The sum of the file sizes does not match

the amount of disk space in use because hard disks cannot be addressed to a finer granularity than their cluster size. If your hard disk is formatted with the FAT32 filing system, the cluster size is usually 512 bytes. Files consume hard disk space in integer multiples of the cluster size so a file that is 513 bytes long takes two clusters on the disk. NTFS volumes usually have 4K clusters, though they can be as large as 64K. A large proportion of the 7.3Gb of "missing" space will be taken up with these partially empty clusters. (There may also be some lost to clusters marked as bad and system files that are not being displayed). You can't do anything about this lost space and there isn't any reason to try. Hard disk space is the cheapest form of storage there is. Just buy a bigger hard disk.

But don't buy one just so you can run defrag. I run defrag about as often as I run format, which is to say never. They are the tools of the pathological meddler. Running defrag as a maintenance tool could be compared to dismantling the engine of your car. There are people who spend their free time doing these things but I will cross the street to avoid them or, failing that, shoot to kill.

CPU Impossible overclocking

Q Currently I'm running an AMD 3000+ Sempron Solution, 1Gb RAM and 512Mb Geforce 6800 Card with Windows XP, SP 2. My problem is with overclocking my CPU through the BIOS settings. When increasing the frequency from 200MHz to anything above I get problems!

First I increased to 230MHz, that boosted the clock speed by a

9x Multiplier to 2.07GHz from 1.8GHz but as soon as Windows loads I get the Blue Screen Of Death. When only increasing the Frequency to 215MHz with a clock speed of 1.9GHz then directly after the Windows loading screen the screen is just blank and nothing comes up! I would like to do this overclock but don't have an idea what is wrong, OS or hardware?

RIAAN ROURKE
jannie.rourke@liberty.co.za

A Owner. Overclocking is not your birthright. Think about it, if all PCs were stable at a higher clock speed than their nominal rating, the manufacturers would set the FSB at this speed and sell them to you for more money. In fact, this is pretty much how the clock speeds for chips within the same processor family are determined. They run them until they start to overheat and then they back off a bit and stick a label on them. If you go shark fishing with three-pound line, you shouldn't be surprised if it snaps.

You can improve your chances of booting successfully on an overclocked system by upgrading the cooling and very slightly increasing the core voltage. Just an extra tenth of a volt can slightly improve the signal-to-noise ratio on an overclocked CPU but it comes at the cost of much higher heat output. Unless you can shed that extra heat effectively, the PC will lock up at best and possibly blow up. It might even rip a whole in your region of space time, collapsing your reality to a mini black hole with infinite density that will fall to the centre of the Earth and eventually consume the whole planet. Granted, this is very much a worst-case scenario, but do you really want to take the chance? **PCF**

VIRUS OF THE MONTH

Don't let this baddie sneak in



The nation checks its stockpiles of digital vaccine.

Name: Lovena
Aliases: W32.Lovena.A@mm
Type: Worm
Infects: Windows 2003/XP/2000/NT/ME/98/95
Number of outbreaks: <100
Virulence: moderate
Lethality: low
First detected: 27/9/2006

Symptoms:

Lovena installs a dozen different files in various locations and patches the Registry in multiple places to ensure that it runs every time Windows starts and to disable some of the common Windows monitoring tools and error messages. It then replies to every email in Outlook Express and attaches a copy of itself to the message. If you have Kazaa installed, Lovena will also try to spread itself by copying itself to your sharing folder.

Lovena actively monitors your open windows and running processes. It will close or minimise any containing one of its search strings in their title.

Prevention:

Standard email procedure of always personally verifying unsolicited email attachments should be enough. Peer-to-peer file sharing is inherently risky. Lovena uses the following aliases: Sexy Wallpaper.exe, A Brave History.exe, Love Story.exe, Password Cracker.exe, Hacking Tutorial.exe, 17 Tahun Keatas.exe, Grand Turismo.exe. Avoid all these files.

Cure:

Detailed removal instructions can be found online at tinyurl.com/gkxgb



HomePlug AV

The new HomePlug AV standard looks set to raise the bar on home networking performance long before 802.11n sees the light of day. James Morris investigates how it achieves its stellar throughput

Wireless technology has popularised the idea that a network could be useful in your home. But even 802.11g isn't a patch on a wired network for performance, which limits what you can do with it. Streaming low-resolution video works over 802.11g, but high definition can't be reliably played across a WLAN. The forthcoming 802.11n standard promises to change this, but current Draft 802.11n products haven't filled early adopters with hope.

In the interim, it looks like 802.11n will have another serious competitor. Networking over powerlines has long seemed like a sensible idea but the first HomePlug standard, which arrived in 2002, offered less performance than 802.11g. Throughput may have reached about the same level with the introduction of the 85Mbps/sec proprietary version of HomePlug, but the new HomePlug AV standard looks set to smash anything wireless has to offer. The throughput is nominally 200Mbps/sec, and manufacturers have already

demonstrated a consistent 90Mbps/sec, which is about three times current wireless technology.

TUNING TO HOMEPLUG

You might think wired and wireless are different technologies, but they have a lot in common. They're both electromagnetic waves – one is transmitted through the air and the other down a wire. Wireless has a different set of problems to contend with, such as more competing signals and frequency allocation regulations. Wired networks don't have these issues, so Ethernet can be run much faster by using a broader range of frequencies.

With powerline technology, the data is piggybacking a wire that's carrying 240V of AC power, but only operating at 50Hz. The original HomePlug 1.0 standard uses higher frequencies than this, in the range of 4 to 21MHz, so the power and data shouldn't interfere, in theory. The frequency range is cut into 84 separate blocks using a process called Discrete Multi-Tone (DMT), with data sent on all frequencies

simultaneously. This is similar to the way ADSL works, although the latter uses a narrower range. Each block carries a small amount of data, but bundled together the throughput can be greater. The DMT system can survive interference as this will only affect some of the frequency blocks.

HomePlug 1.0 still only offered 14Mbps/sec, and much less in real terms. The 85Mbps/sec version is faster, but it's only compatible with products using the same chipset, so you can't guarantee adapters from different manufacturers will work together. HomePlug AV, however, is a fully fledged standard. With HomePlug AV, the frequency range has increased and now covers from 2 to 28MHz. This is split up much more finely into 1,536 blocks, so even though the overall throughput is greater, there are similar amounts of data being sent in each block.

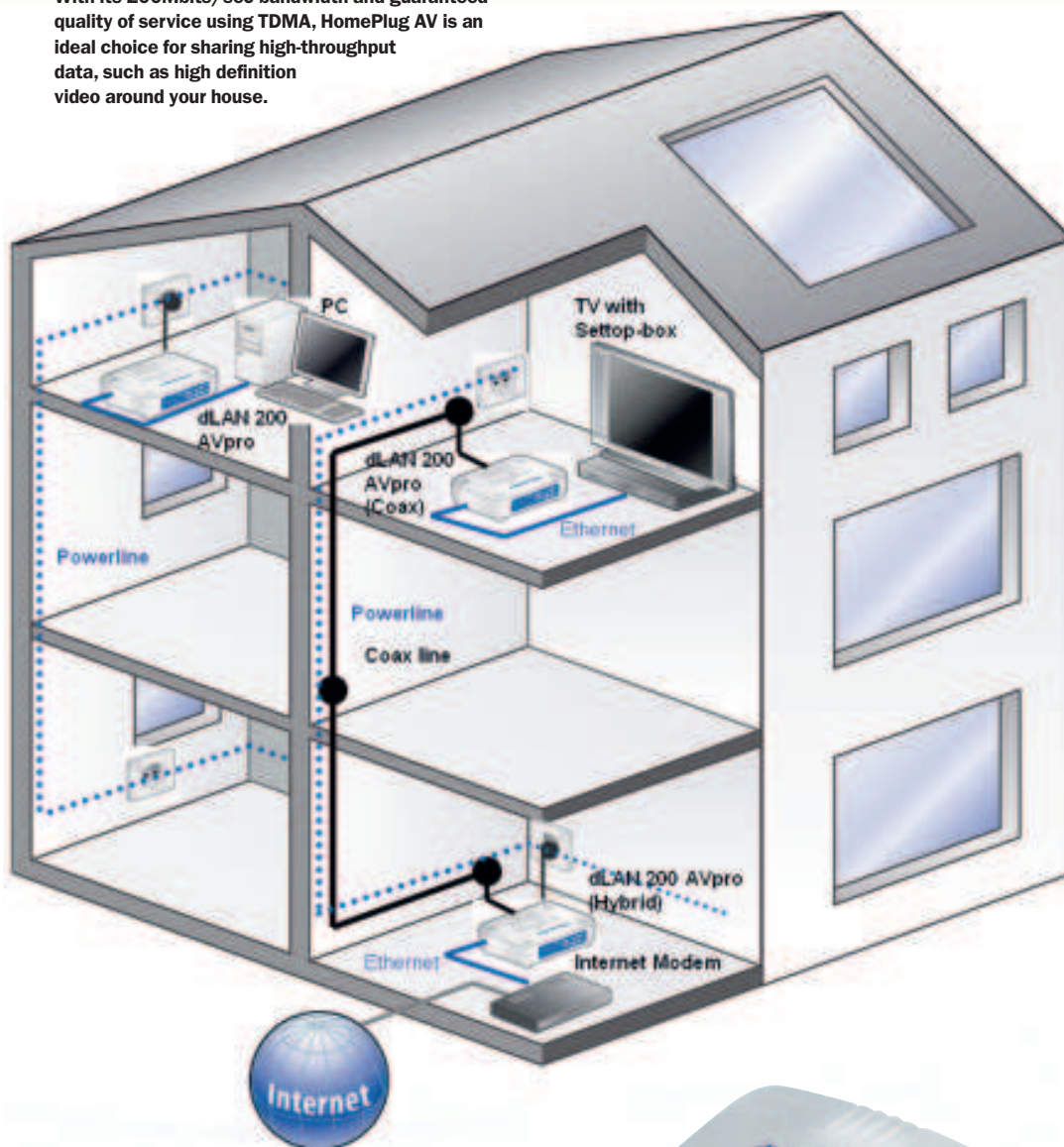
There's an important distinction between the two HomePlug standards, too. Whereas HomePlug 1.0 uses Code Division Multiple Access (CDMA), HomePlug AV uses Time Division Multiple Access

Although many manufacturers have been offering 85Mbps/sec versions of the HomePlug 1.0 adapters, such as these Solwise PL-85PE units, there's no guarantee that they'll work across brands. The 85Mbps/sec system uses proprietary technology to get the higher bandwidth, and isn't a standard.



GET CONNECTED

With its 200Mbps/sec bandwidth and guaranteed quality of service using TDMA, HomePlug AV is an ideal choice for sharing high-throughput data, such as high definition video around your house.



A starter set arrived in the PCF labs just before going to press.

(TDMA). With CDMA, all the devices on the network send data on all frequencies in the range all the time, using an embedded code to distinguish. This is a simple system, but it places a limit on the number of devices that can be on the network. Interference means performance goes down with more devices, so HomePlug 1.0 has a limit of 12 adapters, and it can't guarantee a minimum throughput.

In contrast, the TDMA system divides each frequency block into timeslots. One device on the network acts as the master, and allots timeslots to the devices. This means devices don't interfere with each other. The bandwidth available does decrease with more devices, but degrades in a very controlled manner, which means a level of throughput can still be guaranteed to every adapter. The number of simultaneous devices also increases, with HomePlug AV supporting 20 to 30 adapters.

Although 802.11n is promising nominal throughput well in excess of 200Mbps/sec, with figures up to 540Mbps/sec being quoted, it uses CDMA. It can't guarantee bandwidth to every device on the network.

SHIPPING SOON

The technology used with HomePlug AV does have a downside: it's not backwards compatible with HomePlug 1.0. The two can coexist on the same set of powerlines, but HomePlug AV adapters can't exchange data with HomePlug 1.0 adapters. When a HomePlug AV master device detects HomePlug 1.0 devices, it limits transmissions when the latter are active, then brings the TDMA network back again afterwards – that's the limit on compatibility.

Unlike the final 802.11n specification, products based on HomePlug AV have already started to appear, with devolo being the first to market with its dLAN 200 AVI Starter Kit. The necessity of having a power plug nearby means HomePlug AV isn't as flexible as a wireless network but the potential quality of service makes it a reliable option for less mobile functions, such as hooking your bedroom games' console to the broadband in your lounge or sharing your Slingbox with others. We'll still want a wireless network for freedom of browsing around the house and garden, but HomePlug AV has the bandwidth upper hand for now. **PCF**

Restart

GAMING DEFIBRILLATION

True Crime

REDISCOVER hilarious
multiplay on LA's streets

Chances are that you never played *True Crime Streets* of LA. After all, it appears to the naked eye to be a piss-poor console port with very little of interest to the average PC player. What's important here, however, is that the often overlooked PC market received a special feature that wasn't apparent on the console versions – multiplayer. In a world before *Multi Theft Auto* (www.mtavr.com) became the best way to run around a city shooting and driving into each other at high speeds, there was *True Crime's* four-player rumble in the concrete jungle.

We fired up one of the more amusing modes, The Beat, which involves players

rushing around an extremely large slice of LA in an attempt to be the first to solve randomly generated crimes. These infractions range from chasing down a couple of street racers to a full-on shoot out between cops and robbers. The hilarity comes from the competitive aspect.

Using your car as the weapon of choice against fellow lawmakers (and, of course, the suspects as well) is the best way to ensure that you get the highest final score and win the day. We haven't seen a multiplayer game mode quite like this since – and it's a shame it was dropped for the PC port of the sequel, *True Crime Streets of New York*.



We were just out doing a spot of shopping in LA, when this goes and happens.

FALSE PROPHETS

"COMPANIES OF ALL SIZES MUST GRASP THAT THIS BUG COULD BE INSIDE THEIR BUSINESS AND THEY MUST ACT NOW. ONE HUNDRED WORKING WEEKS IS JUST ENOUGH TIME TO TACKLE THE PROBLEM." TONY 'OUTGOING AND OUTGOING' BLAIR ON THE MILLENNIUM BUG... IN MARCH 1998.

F-1 Spirit

You can keep your chavved up chariots in *Need For Speed: Carbon*. We're racing purists here at PCFormat, which is why we're big fans of the retrogasm that is *F-1 Spirit*. No fancy dark and wet streets here, just lightning-fast top-down racing that requires superhuman reactions. The game's actually a remake of an old Konami racing game, but don't be fooled into thinking this makes for an easy ride.



Get more info about F-1 Spirit at
www.braingames.getput.com/f1spirit

The Waldic

REINVENT Introducing a watercooling
hack for a laptop

We feature some pretty crazy ideas on these hallowed pages, but perhaps the most bizarre hack of all is watercooling a laptop. Bizarrely, though, that's exactly what a chap called Bard Lund Hansen (folk.ntnu.no/bardlund/hack.jsp) has done. Sick of the whirring noise of the fan when he was watching DVDs, he decided he wanted to silently cool his laptop – and came to the conclusion that an enormous heatsink and a spaghetti of piping on the side of his portable was the perfect answer to his problem.

Luckily, though, he had the foresight to make the entire thing removable, meaning his notebook still goes wherever he does. Which is a good thing because lugging a load of hoses around in our already-stuffed laptop bags doesn't really appeal to us atrophied tech journos. Around the house, we'd be more inclined to turn the volume up and drown out the whine of the CPU fan rather than take a hacksaw to our precious machines, but clearly in Norway they've no tolerance for such a lazy fix.



"I WAS LYING IN BED READING ABOUT HOW THE BRAIN WORKS, I THOUGHT YOU COULD MODEL A COUNTRY, ITS ECONOMY AND POLITICAL MAKEUP, JUST LIKE A BRAIN."

Cliff Harris, Programmer/Designer, Positech Games

CHRISTMAS
1999

GAME
THE NOMAD SOUL

SCORE
PCF103 91%



REMEMBER...

Murder, body swapping and David Bowie. Just another day in the wonderful sci-fi metropolis of Omikron...

One of the few games to not just destroy the fourth wall but nuke the entire theatre, *The Nomad Soul* from French developer Quantic Dream opened with a frantic appeal to you, the gimpy player sitting in front of your monitor. A dashing flame-haired chap named Kay'l wants you to assume control of his body via your PC and save his universe.

Despite, supposedly, having no idea who or where you are when you're first ditched in the bustling city of Omikron, you seem to have no qualms about hopping straight into bed with Kay'l's alluring-if-polygonal ladyfriend. From then on the investigation begins to unravel why everything is turning to slurry in his already dystopian, totalitarian state.

Of course, it's not all work, work, work, there's still time to sink a brew or two and listen to the unauthorised band The Dreamers, who are fronted, worryingly, by David Bowie in a posing pouch. If that's all too traumatic, there's always the option to top yourself and migrate your nomadic soul to another of the game's characters – this eventually becomes a vital puzzle solving technique.

ALSO OUT THEN...



TRICKSTYLE

The second game from Criterion Software, purveyor of the fine Renderware platform and the guys behind the great *Burnout* on the consoles, *Trickstyle* was a stunning-looking Dreamcast port. The actual tricks themselves, however, wouldn't worry Tony Hawk for a second.

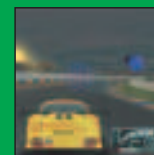
SCORE
PCF 70%



FREESPACE 2

The sequel to the fantastic *Conflict Freespace*, this game featured some of the best space explosions man has ever seen, as shown in *TinyVision*™ above. The great graphics still stand up pretty well today and the brilliant space-faring combat provides some absolutely exemplary gameplay.

SCORE
PCF 88%



LE MANS 24 HOURS

An expansion on the Test Drive series, *Le Mans 24 Hours* saw you participating in the gruelling race in some of the spiciest cars of the era. The game boasted real-time lighting years before *GTR2*, and those in the know still doff their caps to this early masterpiece.

SCORE
PCF 90%

Looking Back

THE CREATOR'S CRITIQUE

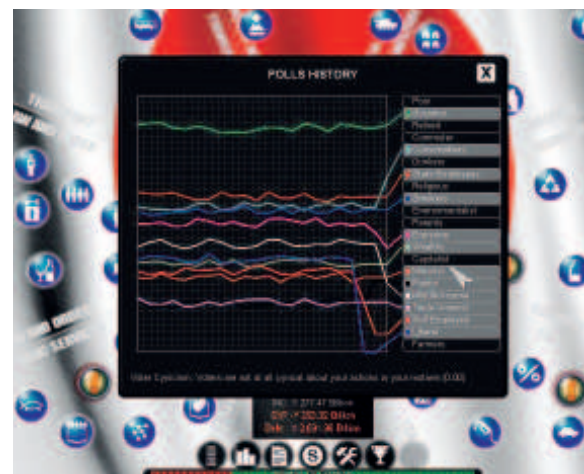


Fact File
Our leader

Subject Cliff Harris
Job title Programmer/
Designer
Developer Positech Games
Reviewed PCF176, 70%



Deciding what truly matters really spices up the game. Ensuring McDonald's workers have enough to buy a McDonald's strikes us as a good idea. Call us crazy.



It's a game based around your internal thoughts, hence the screens are a little quiet. Look – a graph.

Democracy

One man, one vote. One man, one game.
Kieron Gillen is that man

With some people, it takes a while for them to realise that they don't just want to make any old games. They want to make games in their preferred genres where possible. Thanks to internet distribution, it's more feasible than ever to make the leap from a corporate code-slave to an individual auteur. That's exactly what Cliff Harris (AKA Positech Games) did. After an initial money-free career making his own work, he spent five years working in the mainstream with companies such as Elixir and Lionhead before becoming "truly fed up with working for a games company."

The leap proved relatively easy thanks to his changing circumstances. "Maxis wanted me to do

two months' well-paid contract work for them, so that made it easy to leave my job," says Harris, looking back at his time working for the Man with little affection. "I think it would be quicker to list what didn't frustrate me about the mainstream industry to be honest," he sighs. "Long hours (or the pressure to do them), dire planning, pointless redesigns, hype over substance, low pay, complete incompetence in some cases, and a feeling of total enforced isolation from the actual gamers... these were all reasons screaming at me to go and work for myself."

Democracy formed a fundamental part of the push Harris needed to work as an independent games developer. A model of running a government and trying to stay in power while delivering your policies may seem an all too obvious move from someone who worked on Elixir's eventually disappointing politics game *Republic*... you go off solo and try and do it *right*. The inspiration was actually somewhat different. "It was inspired by a book called *Growing up with Lucy* by Steve Grand [*Of Creatures fame* – Ed] on how to build an android. Sod all to do with politics really," he says. "The book got me thinking about how ubiquitous the concept of a neural network is, and how it could be used to represent almost any complex system in a uniform and highly tunable way. I'm a politics nut anyway, and interested in what drives social trends and mass behaviour. It was one of those rare 'flash of inspiration' moments – I was lying in bed reading about how the brain works, and I

thought you could model an entire country, its economy and its political makeup, just like a human brain."

MAKING IT WORK

A big idea usually leads to a lot of work, and this is certainly true of *Democracy*. "Getting my neural network to work was a bit evil, because it makes for a set of game code that's totally divorced from any concept of the game," Harris explains. "With most games, you can poke around in the source code and find out, roughly, how it corresponds to the thing you see on the monitor, but that just isn't so with *Democracy*. It was a chicken and egg problem because, until the network worked correctly, nothing worked, and when it *did* work, suddenly everything worked. It made for fun debugging."

The actual design of the interface was an equally huge problem. "How do you represent governing a country on a monitor?" he asks, rhetorically. "Especially if you have no 3D engine or team of artists. Even if I *did* have a 3D engine, I wouldn't have used it because I saw at Elixir how it just becomes a big distraction. Running a country is actually an abstract concept, which takes place inside the leader's head, so I was determined to represent it exactly how it seemed you'd think about it. The easiest thing to have done would have been to stick some pointless map of the country on the screen and had lots of menu options. Finding a way to make a completely iconic game without it looking too dull was really hard. Often people say, 'You shouldn't

"How do you represent governing a country on a computer monitor?"



Fight The Man while you are the Man.

Developer Diary

Ben Simpson on the games we want to play and the games we want to make



We've arrived at a crossroads – do we continue with our experimental, untried MMO technology in *Dawn*, a game that's taking up some considerable cognitive

thought and to the publishing industry represents a rather large risk? (We don't see it this way, having the unshakable faith in our company's abilities that we do. We do acknowledge that innovation and risk share the same bed, to a certain degree, but since when is that something to shy away from?) Or do we take a step back and provide some proof of the pudding and show them that we're not rubbish, we do have our act together and we're going to make great games?

Well, we said, what games do we want to play? I find it difficult to suggest that development studios should make games that they would rather not play. In this day and age good games come from passion, and that passion comes from a desire to develop and play games, not from one of the numerous suggestions on what the 'mass market' wants, which fly in from all corners. Publishers, journalists and gamers, everyone has a theory.

So, we solicited our team to provide ideas for development. They did, in spades (they are creative people after all...) and, eventually, we decided. We've chosen two games from different genres. An FPS because the concept is cool and it represents an interesting challenge to make. "Never make an FPS," we were told. It's expensive, difficult and one must always remember that there are already mystic masters of the genre waiting to pwn j00. The second idea was a car combat game – an arena-based weapon-fest. Once again, we chose this because it's cool and overwhelmingly the one we would enjoy playing on our spare time.

The result? Games that are played by the dev team themselves during their development breaks. When a bunch of code-monkeys you have to force into the workplace with a wage carrot still want to play the game they've been hacking away at you're on to something. Are they better games for it? Hell, yes. I challenge any publisher's in-house dev studio, who are working on a game that isn't of their devising, to claim they wouldn't rather be working on the 'big idea'. It's why we do it, after all.

Ben Simpson is CEO of Nicetech, www.nicetech.co.uk



Alienate a social group enough and you can expect anything from mild chagrin to assassination attempts.

have made it look this way' but when you ask them to describe how they would do it, they get really stuck for ideas. UI design is the hardest element of making original games. Everything else is just the fluff."

The easier side of the design was the political topic itself. Other developers would have spent a lot of time reading up on this. So how much time did Harris spend on research? "Absolutely zilch, which just goes to show what a politics junkie I am," he laughs. "All the dilemmas, events, issues, descriptions and explanations are straight from my head. I did a degree in Economics, so that helped out." The real problems arose in how these things actually interacted, and game balance was nightmarish. "If there are maybe 200 variables and they all affect each other, sometimes feeding back in loops, in ways described by 200 different

equations, you can imagine what a bitch that is to balance," says Harris. "People who balance the weapons on an FPS game are on easy street, I can assure you."

ALL-ROUND SUCCESS

The game was successful on its release, both commercially – "It enabled me to quit my job, and pay the rent, even in gold-paved Surrey," says Harris – and critically. It even received the Best Sim Game of the year award from www.gametunnel.com. But most importantly, it was an emotional success. "I think a game has succeeded if it provokes the correct emotional response. When you first play *Aliens vs Predator* and it scares the crap out of you, that's success," Harris explains. "When you first nuke the opponent and capture his base in an RTS, you get this urge to shout 'bwahahahaha!' and that's success. Bizarrely, what I was going for was a feeling of having to make tough decisions, with lots of nail biting and agonising, combined with having to keep 100 plates spinning at once. I imagine that's what running a country is like, your always shafting one group of people whether you like it or not."

Best of all, being a complex simulation, it can even teach its creator a few things. "The first time I was able to play a game of *Democracy*, I was planning to check it would work as a leftie socialist leader," he recalls. "It was going well, until I had some economic problems, and suddenly I was cutting health provision to balance the budget, and passing laws to keep the religious right happy, all the while saying to myself, 'This is just a stop-gap – I'll fix it later.' At which point I thought, 'F***, I'm Tony Blair...'" **PCF**



Appoint Elizabeth Jones. She's a hottie.

Indie cred

How to go it alone, if you dare...

Thinking about going it alone? Cliff offers his advice. "Don't do it with your first game. It'll suck and nobody will buy it," he says. "It doesn't matter if you're a top-flight coder at a triple-A studio, indie dev is different. Get to know your

artists, animators and producers and find out what they do because you'll have to do their jobs. Forget about graphics, you won't impress anyone – you need to be good at game design. Hang out with indie gamers and learn the realities.

Most people make very little money for a long time. Eventually you'll realise that making a game that sells 100 copies is hard." But the upside is a big one. "Working for yourself making games you like is the best job you could have."

ReFresh

MORE FUN, SAME GAMES

The Mod Squad

Squeeze a little more out of tired titles

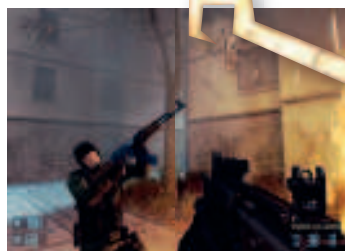


Infinity

Game Standalone

Web www.fl-tw.com

This is a standalone space MMO that looks and plays like *Freespace* but promises much more. At the moment the team are still about a year or so away from releasing a build, but for now you can download the combat prototype portion of Infinity. Watch some of the videos on the site though and you'll see some of the spectacular ground-to-low-orbit demos the engine is capable of. Ever in first-person? We can't wait.



SMOD Tactical

Game HL2

Web phatcat-online/tactical/downloads.html

Somewhere between *Half Life 2* and *CounterStrike Source*, but with a dash of *F.E.A.R.*, *SMOD Tactical* takes the singleplayer story of *HL2* and get militant. Gone are Gordon's generic shooters to be replaced with authentic, highly detailed tactical firearms. Also, *SMOD Tactical* adds *F.E.A.R.*-like bullet time and flying kicks. It's like all your favourite FPS games in one!

HONOURABLE MENTION



Evolution Q3

Game Quake III

Web evolution.quakedev.com

When Carmack released the *Quake III* source code, it was only a matter of time before this happened. As with *Tenebrae* (tenebrae.sourceforge.net) for the original *Quake* engine, *Evolution Q3* takes the core framework of the hoary classic and adds lots of modern day bells and whistles, like multiple shadow-casting light sources, pixel shader effects and so on. And *Quake IV* was stuck in development hell for how long, exactly?



MMOG Log

Good news for Dungeons & Dragons fans

Turbine's *Dungeons & Dragons Online* has just received a boost, in the shape of The Demon Sands module expansion. As well as the obligatory level cap increase the module has added a new auction house system so players can trade between cities. There are also a few more monsters for your sticker album Bestiary. Efreeti, Genies, Gnolls, and Marilith demons have all been added. No word on if those Gnolls are grassy though.

Elsewhere the *Burning Crusade* beta test has been extended, which also means the release of *WoW*'s first expansion has slipped into next year. This is good and bad news. Good for obvious polish reasons but also because it allows winners of *PCF*'s exclusive beta-key giveaway more time to play (see blog.pcformat.co.uk for details), bad because the rest of us plebs have to wait a few more months. Patience may be a virtue but it's not a flying mount now is it?



RE-RELEASES THIS MONTH

Old progs, new tricks



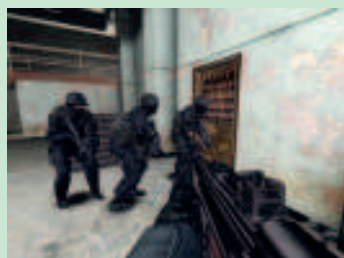
House of the Dead 3
Sold Out >> £10

Forget *Dead Rising*, what better way to mow down the undead than with a real gun? There's nothing we like more than battling decomposing corpses, after all.



MotoRacer 3 Gold Edition
Sold Out >> £11

This is a long-term fave of our Tech Ed, and now it's out on a budget you can join in his screechy, squeally fun for next to nowt. This is the *GTR2* of motorcycling games, so don't miss it.



Rainbow Six III: RavenShield Gold Complete
PCG Presents >> £10

Before *SWAT4*, this was the last word in tactical shooters for CQB. Relive its slightly blocky majesty with this timely budget release.



X3 Reunion: GOTY Edition
Deep Silver >> £18

Space is, like, big man. Big enough to hide a spurious accolade like *Game of The Year* in. While not what everyone hoped it would be, *X3* is still worth a look for under £20.

**PRIZES WORTH
MORE THAN
£1,500**

WIN!

Learn to fly with Microsoft's Flight Simulator X...



FOR REAL!

Win this once in a lifetime, full-length helicopter training course thanks to Microsoft's Flight Simulator X

FSX is about as close as you get to flying for real. With unprecedented realism both in the cockpit and across the virtual globe, FSX is the last word in flight simulation. Nothing else comes quite as close to that sense of freedom. What better way to prove it though than by learning to fly yourself? We've teamed up with the maker of the game, Microsoft Game Studios, to bring you this once in a lifetime opportunity to learn to fly a Robinson R-22

helicopter with a complete Heli-Start Helicopter course. Not only will the winner receive full training but they'll also get membership to the Elstree Aerodrome (where the training will take place) for free.

On top of all that, the winner will also receive a copy of *Flight Simulator Deluxe Edition* and a HOTAS Cougar Thrustmaster flight yoke for that ultra-realistic feel. Don't miss your chance to experience the thrills of FSX for real, enter now!

HELICOPTER COURSE DETAILS

- >> Learn to fly a Robinson R-22 Beta – The world's most popular training chopper!
- >> Five two-hour lessons at the London School of Flying at Elstree Aerodrome in Hertfordshire
- >> Full briefing before each flight
- >> All flight hours count toward your Private Pilot's Licence

HOW TO ENTER

To win this amazing prize, simply answer the question below. Email your answers to dave.james@futurenet.co.uk with 'whirlybirds' in the subject line. Good luck!

Air travelling over top of a (working) aeroplane wing moves:

- a) Faster than the air flowing under it
- b) Slower than the air flowing under it
- c) At the same speed as the air flowing under it

Terms and conditions

1. Employees of Future, Cabair, Microsoft or Thrustmaster and their immediate families or agents are not eligible to enter. 2. The prizes will be awarded to one randomly selected correct answer received by the closing date. 3. The Editor's decision is final and no correspondence will be entered into. 4. Entries must be received before 30th January 2007 which is the closing date. 5. Multiple entries will be discarded. 6. There are no cash alternatives. No purchase is required. This competition is open to UK residents over the age of 18 only. 7. The winner must pass a JAA medical which must be carried out by an approved medical practitioner before being allowed to fly.